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PLUCK AND LUCK

STORIES OF ADVENTURE.

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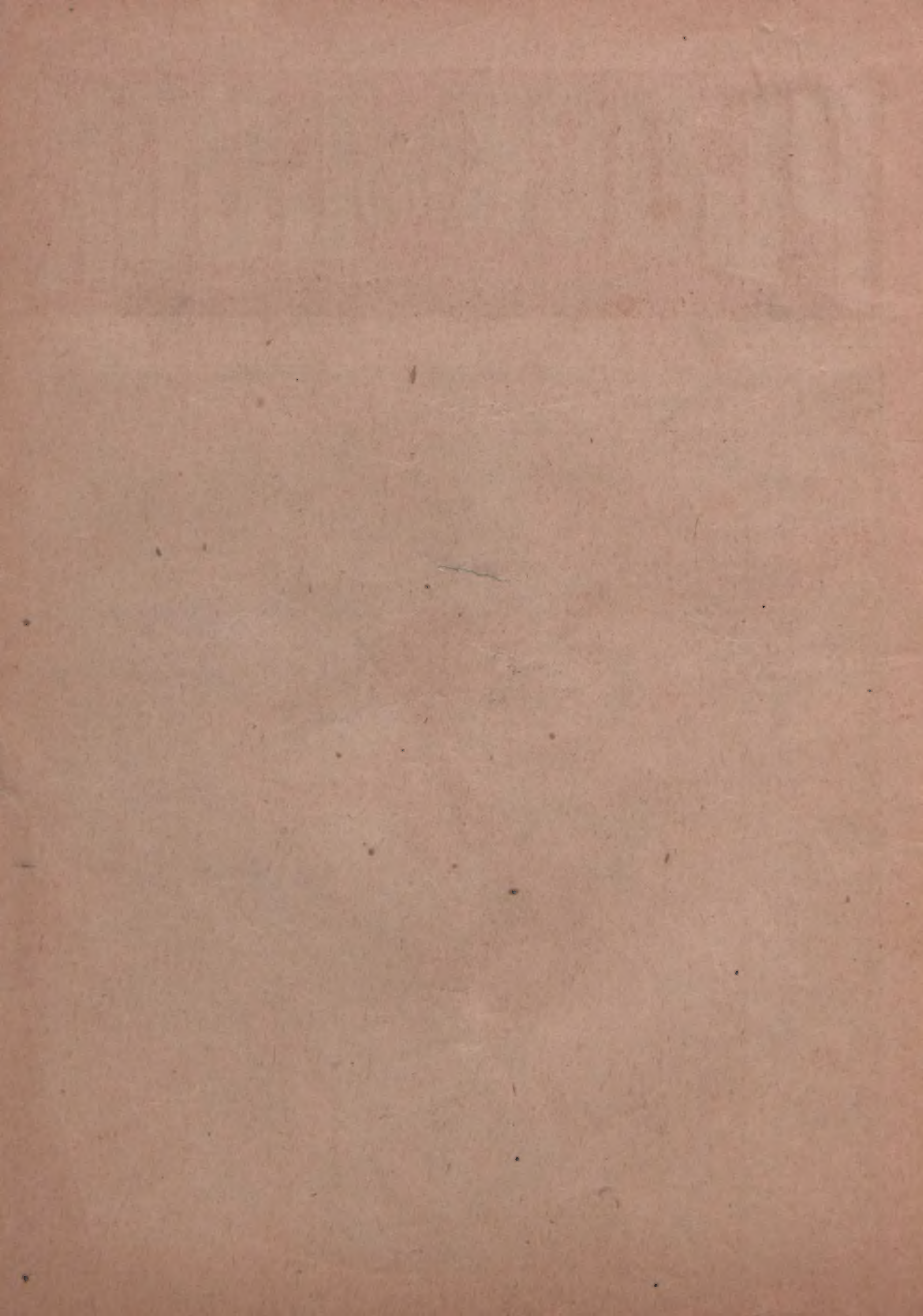
NEW YORK, DECEMBER 26, 1923

Price 7 Cents

PHIL THE BOY FIREMAN;



Phil was sick and faint, but he had strength enough left to lift Mrs. Dunton's unconscious form out upon the ladder. Brave Jack Rodney was there ready to receive her and he shouted: "Did you find her, Phil?" "Yea, Jack."



Interesting Radio Articles on Pages 24 and 25

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NEW YORK, DECEMBER 26, 1923

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PHIL, THE BOY FIREMAN

OR, THROUGH FLAMES TO VICTORY

By EX-FIRE-CHIEF WARDEN

CHAPTER I.—The Fireman's Ball.

"The grand march is coming!"

The exclamation passed from lip to lip, and the great crowd in the galleries pressed forward to get a better view of the enlivening scene upon the floor surface below. It was the occasion of the grand ball of the Fisherville fire department, and all Fisherville's best people were present. The spectacle was a grand one as the fire laddies marched out upon the polished floor and formed in line. First of all came a type of the traditional good genius of the fireman, known as "Old Mose." No fire company is lucky or holds its prestige without a "Mose," and the present representative of the old-time fire boy played his part to perfection, drawing cheer after cheer from the crowd.

He was a thick-set, determined-visaged man, with sleeves rolled up, heavy rubber boots on, and a general air of abandon and "toughness" quite in keeping with the character. He carried a huge fire trumpet in his hand, and as he swaggered in characteristic style about the hall, drawing a miniature silver fire engine after him, he drew thunderous applause from the crowd, which understood the "gag." After him came "little Mose," a small edition of himself. Then followed a long line of fire laddies. Among the fine collection of boys was one to whom we will give special attention. He was young, indeed, a lad not over eighteen, but wonderfully well knit physically for his age. His name was Phil Mason, and he was the son of poor but respectable parents in Fisherville.

He worked in the great cotton mills of Colonel Rippleton, and earned good pay, though Phil was never able to save up much, for it took it all to support his aged parents, who worshipped him. Phil had not an enemy, to his personal knowledge, in Fisherville. Everybody seemed to like him immensely, from the highest to the lowest, from the poorest bobbin boy in the mill to the fair and bewitching Agnes Rippleton, the rich colonel's only daughter, a miss of about Phil's age. In this latter case the likening was of no ordinary sort, though handsome but penniless Phil had never dared to dream that he could ever be anything more than a good friend to the peerless Agnes Rippleton. They met very frequently at social

affairs in the village, for Phil's many personal and mental gifts won his way into the best circles despite his poverty. And pretty, piquant Miss Agnes always had the best time of the evening with Phil Mason. Colonel Rippleton and daughter were in attendance upon the present evening. Agnes appeared upon the floor on the arm of Phil Mason, and a handsomer couple was never seen by those present. They attracted general attention, and from at least one member of the dancers, a glance of envy and hatred.

"Confound that young Mason," was this individual's exclamation. "He is an impudent puppy. How did he ever get her hand for this dance?"

The speaker, or rather thinker, for he did not utter the above sentiments aloud, was a member of Phil's own company, and his name was James Dunton. It might be explained that it was considered quite a thing by the eclat young men of Fisherville to belong to a fire company, though few of that class became heroes. Dunton was one of these, and what might have been termed "afflicted" with plenty of money if not a superabundance of brains. Dunton was secretly desirous of winning the affections of pretty Agnes Rippleton, who could not endure him. And it angered him mightily to note Phil Mason's success with the beauty. They passed quite near and neither deigned to notice him. Colonel Rippleton came up at this moment and shook hands warmly with Phil. He was a fine type of man, in fact, a gentleman through and through; tall and stately in figure, with gray side-whiskers and florid complexion. He was the magnate of Fisherville and its mainstay.

"Well, Phil, I am glad to see you," he declared. "This is a happy occasion."

"You are right, sir," replied Phil. "I wish to say, Colonel Rippleton, that this is a desired opportunity to speak with you upon an important matter."

Phil drew a letter from his pocket and handed it to the colonel.

"Read that," he said. "It was received by me yesterday. The man who sent it is a personal friend, and as you will see, a detective."

"To Mr. Phil Mason:

"I write to warn you of a great danger which

threatens the mills at Fisherville. I have got track of a bad gang of professional firebugs who are going to raze the Rippleton mills if they can do it. Have the mills watched. Notify Colonel Rippleton, but impart this to nobody else, not even your parents, until you hear from me again.

"Yours anxiously,

"SAM DAYTON, Detective."

Colonel Rippleton was too astounded to make speech after reading this deadly warning. He gazed at Phil blankly.

"Is this bona fide?" he asked finally. "Do you know this detective?"

"I do," replied Phil, promptly. "And I can vouch for the good character of the same. I have done my duty, Colonel Rippleton. Now, I am at your service."

"Heavens! if that is the truth I am in great peril," exclaimed the colonel, with white lips. "Yes, Phil, I depend altogether upon you. I want your help. What shall I do at first, Phil?"

"Keep dark," replied the astute young fireman. "I have no doubt but that Sam Dayton will save the day. He will be in Fisherville to-morrow morning and lay for the gang himself. But I think I can help him, Colonel Rippleton, and, with your permission, I will give up work in the mill for a few days."

"By all means," cried the colonel. "I depend wholly upon you, Phil. Remember, life and property depend upon you, and you shall be well rewarded."

The next moment handsome Phil was gracefully going through the dance with pretty Agnes. They were the cynosure of all eyes, and Colonel Rippleton felt proud as he watched them.

"There is the making of a man in Phil Mason," he declared. "I mean to help him up when the times comes."

The ball progressed famously. Everybody seemed to be having a good time, and the evening seemed likely to pass without an unpleasant incident until the supper hour arrived. All the evening Jim Dunton had watched an opportunity to besiege Miss Agnes for her hand in a dance. But each time he had been baffled by some other fortunate man, and this had wrought him up to a fine frenzy of disappointment and jealousy. His was such a conceited, narrow turn of mind that he did not reckon upon the truth that Agnes Rippleton purposely avoided him, and his persistency became obnoxious to her. But when the supper hour came he saw her standing alone, and, believing it to be his opportunity, he rushed unceremoniously up to her.

"Ah! Miss Rippleton," he exclaimed, suavely, "allow me to escort you to the supper table. I see you are deserted, and you cannot refuse my services now."

"I beg your pardon, Mr. Dunton," said Agnes, drawing back coldly, "but I am pledged to Mr. Mason for the supper table."

"Your fascination for that low-bred puppy overrules your good judgment, Miss Agnes! You are disgracing your social standing by associating with such a pauper!"

Dunton did not know that Phil Mason, with flashing eyes, stood at his very shoulder and heard every word. He turned deadly pale when the discovery came.

"Your reference to me in the presence of Miss Rippleton is an insult, sir," exclaimed Phil, stepping before him and taking Agnes' arm.

But Dunton's wrath was of the blunt sort, and he reeked not what he said or did. He glared at Phil insolently and defiantly.

"I do not flinch from giving it to you personally," he gritted. "You are a low upstart, Phil Mason. You are a beggar."

Phil's form shook as if rocked by the tempest. It was with a mighty effort that he controlled himself.

"You have me at a disadvantage, Jim Dunton," he said. "I am in the presence of a lady."

"That excuse will not cover up your cowardice," retorted the villain. "To show you my opinion of and contempt for you, I will give you the insult direct and dare you to pick it up."

Before Phil could realize what the villain's intentions were, he had stepped forward and struck our hero a smart slap across the face with his glove. It was a most startling act. A low cry broke from Agnes. But it was an overtax of Phil's commendable manly forbearance. Human nature could not help but assert itself, and the young fire laddy's arm flew out like the kick of a mule, and Dunton went to the floor in a heap. He was instantly upon his feet, and a thrilling scene might have ensued, but at that moment a distant, deadly warning rang through the hall and turned the tide of affairs. Clang! Clang! Clang!

"Fire—fire!" was the mighty cry.

CHAPTER II.—A Brace Act.

It was a sudden and unceremonious breaking up of the firemen's ball. But the fire laddies, ever ready for duty, thought not of that, and precipitately left for the scene of action. The fire was in a large four-story tenement house, and the fire company were upon the spot none too soon. Flames were belching out of the windows, and the scene was altogether a thrilling one. The inmates of the house, suddenly aroused, had sought refuge in part upon the roof; others hung over window sills, crying for help. The fire started in the main stairway of the building, and cut off all escape in that direction. The experienced eye of Phil Mason saw that rapid work must be done to save human life. The structure, being old and rickety, must burn like tinder, and if the people on the roof were not relieved, they would surely meet their death. Everybody had been rescued save the people on the roof, and the firemen were agonized for a plan to reach them. There seemed virtually no help for them. But brave Phil Mason, who had accepted the most daring risks and had but descended from a ladder, was the one to first hit upon a plan. He knew that quick action had got to be made, and at once he called to several of the boys.

"Put a ladder against that west corner," cried the intrepid young fireman. "Don't fear for me. Hurry up."

Wondering what his plan was the fire boys hastened to obey his command, and a ladder was placed as he directed. Phil drew from the bunker of the fire engine a long coil of light but extremely strong steel wired fireproof rope invented by

himself and being wound with steel could not burn. This he slung over his shoulders, and no sooner had the ladder been placed than he ran up it like a monkey. Up—up he went, flames and smoke surging nearer him, while the breathless, suspended crowd watched him. Now he had reached the top of the ladder. There was yet ten feet between him and the roof. The wretched prisoners above gazed down upon him hopelessly. A shiver ran through the crowd. What was the boy's purpose? With ten feet of smooth wall between him and the roof, how could he hope to reach it? It was an anxious, suspenseful moment, and then a roar went up from the crowd in the street. Phil gazed up to the people on the roof. Among them he recognized a strong man named McPherson.

"Mac!" he exclaimed, "I want your help."

"All right, Phil," replied the pallid faced man, eagerly. "What can I do? I am afraid you can't get us and we are gone up. Don't take any chances, Phil."

"Catch this rope," cried Phil. "Take one turn around the chimney with it and hold it fast."

Up—up went the rope. It cleared the edge of the roof. McPherson gripped it, the ladder swayed, swung outward and hovered a moment in air. The firemen below put superhuman strength to it, forced it back, and brave Phil Mason was safe. McPherson now played his part well, taking a turn with the rope about the chimney, and then the crowd drew a deep breath as they saw Phil mounting upward. He reached the roof. The people there pulled him up, and he stood with them. A terrible shudder ran through the crowd. Fisherville's bravest young fireman was taking mighty chances. But he had not acted without forethought, and the wisdom and ingenuity of his plan now manifested itself.

Before ascending to the roof he had fastened one end of the fireproof rope to the ladder, and now he beckoned McPherson to take hold with him, and, aided by the others, they quickly pulled the ladder up to the edge of the roof. As Phil's plan now became patent, the interest reached fever height. It was an easy matter for the men on the roof to descend two at a time by the ladder, secured safely by turning the rope around the chimney. The women were assisted down by the men, preceding and assisting them. When the end of the ladder was reached, being not over ten feet from the ground, a blanket held beneath caught them one by one safely. Of course all this took some time, and the flames were making terrible headway, though manfully fought by the hosemen. It became evident before the roof was cleared that the structure was doomed. At last the last man slid down the ladder, and it came brave Phil's turn to descend.

Pen cannot depict the reception with which he met. Everybody, his friends and those he had rescued, clustered about him, embraced him and showered encomiums of praise upon him which would have turned the head of an ordinary man. But he smiled, and happily thanking all, disentangled himself, and took his station once more with his brother firemen at the hose. After a time the fierce destroyer was conquered, and in the early hours of the morning the fire laddies wearily picked up their effects and made their way homeward. But as Phil was leaving the scene a

man stepped up and touched him upon the shoulder. Phil gave a start.

"Sam Dayton, the detective!" he cried.

"Yes," replied the man, who had written Phil the note of warning mentioned in a previous chapter, "and I am glad to meet you at this opportune moment. There is some good work for us to do, for at this very moment I am on the track of the firebugs."

CHAPTER III.—Phil Takes His First Lesson In Detective Work.

Words cannot express Phil Mason's astonishment at this declaration. He was tired, even exhausted, from his night's work, but it was all forgotten in the thought that there was a possibility of capturing the firebugs.

"I am your obedient servant," said Phil. "By the way, I spoke to Colonel Rippleton about the matter, and he has commissioned me to leave my work in the mill and devote my energies to the capture of the rascals."

"Very well," rejoined Dayton. "I think I can give you plenty of work to do."

In company with Dayton Phil separated from the crowd and turned into a side street. It was pitchy dark, and Phil could see that he was being led into a rough quarter of Fisherville.

"I left the villains in Mother Gruller's shanty over a bottle of beer," explained Dayton. "They may be there yet. They are to keep an appointment about this time with some pal; just who he is I do not know, but I have good reason to believe that he is the man who is setting them on."

"Mother Gruller's place," exclaimed Phil. "Then you know who the firebugs are?"

"Oh, yes," replied the detective. "I once had them behind prison bars for stealing. Their names are Dan Barton and Gabe Gruller. The latter is a son of Mother Gruller's."

They had come now in sight of a dilapidated old building one story in height, which was known as the abode of old Mother Gruller—a thieving old mendicant. A light shone from one of the windows as the two drew nearer, and approaching quite close they peered in upon a wretched scene. At a rough board table sat two villainous-visaged men engaged in boisterous talk. An old woman sat crooning by the fire. Upon the table were two empty bottles.

"I tell ye what, Gabe Gruller," cried the man known as Dan Barton, bringing his fist down upon the table with a bang. "That thar boy, Phil Mason, is a tossler, an' don't ye fergit it. Jes' look at how he climbed up that ladder an' fetched them people down. I 'low I'm too much of a coward to try enny sech trick myself."

"Well," spluttered Gruller, who was half drunk, "what's that boy got to do with us?"

"A mighty big heap," declared Barton, forcibly. "That boy is pizen on rats every time. Don't yer think he ain't! Let me tell yer something: He is hand in hand with that skunk of a detective, Sam Dayton."

"How do yer know that?"

"Bekase he got a letter from him only yesterday."

"Then we'll watch the young cub. Consarn him. I never liked his looks, anyway. He is a meddlesome dog."

"What's the time?"

"Three o'clock, an' time to go. Are ye ready? So-long, old woman. We'll come again."

The crone by the fire only mumbled something unintelligible at this, and the men passed out of the cabin. The two watchers slunk away in the shadows, but did not lose sight of their birds. Away in the darkness strode the two plotters. They were followed silently and cautiously by Phil and Dayton.

"Do you think they mean to fire the mills to-night?" he asked feverishly.

"I do," replied Dayton, with conviction.

"Heavens!" gasped Phil. "Then let us arouse the town."

"No! By no means. That would be folly. This is the chance of a lifetime. We can frustrate their scheme by catching them in the act, thereby securing their certain conviction."

Phil could not help but see that the detective was right, and with an effort restrained himself. By this time they were near the mill gates. Here one of the men seemed to produce a key which unlocked the gate and entered the mill yard. A few seconds later Dayton and Phil crept up to the gate and found to their joy that it had been left open. It is needless to say that they passed through and into the yard, which was wrapped in pitchy darkness.

Their ears, however, guided them as to the direction taken by the firebugs, and they crept noiselessly along. Now they were upon the verge of the deep, dark canal which flowed through the mill yard. They reached a bridge and crept across it. What pitchy darkness! Phil was in a terribly excited state of mind, and hardly knew what to do or say. He followed Dayton implicitly. The firebugs had, according to the detective's premise, passed behind a long wooden shed. To the corner of this they now crept, and then smothered voices were heard, and then a gleam of dim light was visible.

The cry of fire was upon Phil Mason's lips, but he checked himself. To Dayton the light was recognizable as that of a dark lantern, and as it grew stronger he gave a smothered cry of surprise. Instead of two firebugs the lantern revealed three. But only their forms could be seen. They seemed conversing in dull tones for a moment, and then the light was shut out. A second later a dark form rushed past the watchers and crossed the bridge.

It was then that the terrible climax came. Suddenly a bright, lurid light flashed out through the inky darkness of the night, and the entire mill wall, with its windows, was lit up. The flames were mounting upward; the firebugs had made their strike. What followed was ever after to Phil Mason like a dream. He knew that the mad impulse was predominant to extinguish the flames, and he rushed into them, scattering the combustible material into the canal. The conflagration was arrested, the mill was saved.

But the detective's prime instinct was the capture of the firebugs. He saw two dark forms rushing by him, and calling to Phil he flung himself upon them. A terrific struggle followed. Loud cries and blows smote upon the night air, and the two firebugs seemed to overpower the brave detective. It was at this moment that Phil

Mason succeeded in scattering the fire, and he came to Dayton's assistance, but just too late. Gruller had struck the detective a terrific blow upon the head, which caused him to fall against a heavy section of iron pipe which was piled up by the shed. In the darkness Dayton could not act to save himself, and as a result the whole pile of iron fell upon him. A sharp cry of agony escaped his lips and then he became unconscious. The firebugs dashed away into the darkness and escaped.

Unwitting the accident which had befallen Dayton, Phil Mason rushed in the direction of the mill gate. In the indistinct light he saw dark forms rushing through it, and, thinking that Dayton was pursuing the villains, he rushed after them. But the darkness swallowed them up, and in a dark street they made good their escape. It is needless to say that Phil was intensely excited. His first impulse was to now arouse the town, and the fire alarm box being near, he pulled the wire and sent the clangor of bells forth upon the night, or, rather, morning air. The result was gratifying to him. Scarcely three minutes had elapsed when the clangor of the fire companies was heard. A second time that eventful night were the fire laddies called forth. A moment later and they had reached the mill gates. Phil Mason was there, and excitedly explained to his brother firemen what had happened.

"It is not a fire this time, boys," he cried excitedly. "But the firebugs. We must capture them if possible. Dayton, the detective, is upon their track already."

The cry went around, and the fire boys scattered in all directions to search the town. But several of them went down to see whether any sparks of the incendiary fire were left or not, when a cry of alarm came from them. They had discovered the detective.

"What! You here, Dayton?" cried Phil in horror, as he bent over the wounded detective in the light of a lantern. Dayton had just regained consciousness, and looked up into the young fireman's face with a feeble smile.

"I—I guess I am badly hurt, Phil," he said, painfully. "But don't mind me. Have you caught the firebugs?"

"No, but we will catch them," cried Phil, with determination. "Come, boys, give me a helping hand, and we'll take him down to my house. One of you go for a doctor."

Willing hands helped to lift the wounded man upon one of the fire engines, and he was taken to Phil's home, where the young fireman's mother, a kind-hearted widow lady, was anxiously awaiting her son's return. The doctor was summoned quickly, and it was found that Dayton's right leg was broken. It would be months before he would be able to use it.

Meanwhile word had been sent to Colonel Rippleton, and he had hastily driven up to the door of the Mason cottage. He came in and gripped Phil's hand warmly, while he bent anxiously over the wounded detective.

"Spare no expense to make him comfortable," he cried. "I am responsible for all bills. Sir, you are a hero, and you, Phil Mason, are another. Saved my mills from the firebugs, did you? Ah, you shall be rewarded well."

Sitting down by the wounded man's bedside, the magnate of Fisherville listened to the details of Gruller and Barton's attempt to fire the mill.

"I don't understand it," he muttered in mystification. "Who can it be? I have not an enemy in the world to my knowledge."

"Nevertheless these men are but the tools of a third party," declared Dayton. "You may depend upon that. But what can we do now? I am bedridden."

"I will pay five thousand dollars for the detection and arrest of the villains," declared Colonel Rippleton, emphatically.

But the events of the day were not yet over. The news had spread like wildfire through the town that Phil and Dayton had frustrated an attempt to burn the Rippleton Mills. The excitement was intense, and people had called by the score to inquire for the details. This had kept Mrs. Mason busy; but among them came one unwelcome visitor. Mr. Jim Dunton walked up to the door and unceremoniously into the house. In a loud voice he said:

"I want to see Phil Mason."

"I am here!" replied Phil, coming forward. "What do you want?"

"I want to inform you of the fact that I have purchased the mortgage of this house and intend to foreclose at once," asserted the young villain stiffly.

The shock was so great that Phil nearly fell to the floor. It was a cruel blow that Dunton had struck, as all present could see. The effect upon Mrs. Mason was the most severe, and drew an angry flash from Colonel Rippleton's eyes.

"Look here, Dunton," he exclaimed, "this is not fair play. So long as they fully pay the interest on this mortgage you ought not to turn them out."

"That is my business, Colonel Rippleton."

"Is it?" retorted the wrathful colonel. "Well, I will pay off this mortgage and own this house myself. You cannot refuse or evade the lifting of the same. Here is my check for the amount."

This generous act upon the colonel's part drew a cry of joy and triumph from Phil's lips. He had one good friend at least. Dunton was baffled. He could not help or evade the mortgage being lifted, as Colonel Rippleton had said. Therefore, he was compelled to accept the magnate's check with an ill-mannered snarl.

"It don't become a man of your cloth, Colonel Rippleton, to foster such intimate relations with people of this sort," he exclaimed, spitefully. "I mean to teach him a lesson."

Before anyone could guess the villain's meaning, he turned to the door and made a motion with his hand. A man came in who was instantly recognized as the sheriff, whose name was Brown.

"There is the man who assaulted me at the ball last night, sheriff," cried Dunton. "You will oblige me by arresting him."

Phil started back aghast, as the sheriff stepped forward and placed a hand upon his shoulder.

"Arrest me?" gasped Phil. "But you must not—you cannot. I was not to blame. I can prove by a hundred witnesses that he struck the first blow."

"It is a lie!" cried Dunton, fiercely.

"It is the truth!" cried Colonel Rippleton, coming forward, grandly. "I saw him, sheriff. Not if it takes my whole fortune shall prison bars close upon this boy!"

Colonel Rippleton accompanied Phil and the sheriff to the residence of the justice, where the magnate did not hesitate to go bail for the young fireman. Jim Dunton, somewhat discomfited, but with a dark, vengeful light in his eyes, took his departure. After leaving the justice's house, Phil received word that the detective, Sam Dayton, wished to see him. Hurrying to the bedside of his friend, Phil found him a state of some excitement.

"Phil, my boy!" exclaimed the wounded detective; "an idea has just entered my mind. Of course, it may be but a vague theory, but I will give it to you, as it may aid you in your work. I have singled out a man who I think, for reasons which he hopes will accrue to his own advantage, seeks the financial ruin of Colonel Rippleton. His name is James Dunton."

"Jim Dunton," gasped Phil, and could say no more.

"No doubt you are surprised, and may think I have hit the wrong man, but——"

"No," interrupted Phil; "you have hit the right man."

"Do you know that?"

"Well," stammered the young fireman, "that statement may be a little premature. Yet I have a strong suspicion that Jim Dunton is the villain who is backing the firebugs. Assuming that he is, who would you ascribe as his motive? Why should he seek Colonel Rippleton's ruin?"

"What?" exclaimed the detective, with surprise. "Can you not see? Surely you are cognizant of the fact that Dunton is badly smitten with Agnes Rippleton. It is, to my belief, his plan to bring the Rippletons down to penury, if he can do it, when he thinks, craven that he is, that the colonel will gladly seek an alliance for his daughter with a man like himself who has money enough to relegate the family again to luxury."

"My soul!" cried Phil Mason, aghast with the stupendous villainy of this apparent scheme of his rival. "What a colossal piece of villainy! He will never gain his rascally ends, for I knew that Agnes would suffer death rather than marry him."

Phil's heated brain was racked with a thousand vague fears and doubts, when a few moments later he took his homeward way. What if the villain should succeed in his plans? It was true that he had wealth, and it was a powerful lever.

The next day a hearing was given Dunton before the magistrate, with regard to his charge against Phil of assault the night of the ball. After an ineffectual attempt by Dunton's lawyer to show Phil's guilt, the young fireman was proved not guilty and was discharged honorably. Dunton, savage and more vengeful than ever at this defeat, left the courtroom, and for several days was not seen in the town.

The firemen had planned as an annual event a sort of gala day, with a grand parade and sports

CHAPTER IV.—Jim Dunton's Schemes.

"I am sorry, Mr. Phil," said the sheriff, who knew him well, "but I am obliged to do my duty. He had sworn out a warrant and has witnesses."

to be held afterwards upon the village green. Great interest was taken in the affair, and an interesting programme was drawn up.

The day came bright and glorious as one could wish, and everybody arose in good spirits, for the event was one of much importance to the pleasure-loving people of Fisherville.

Every member of Phil's company was on hand bright and early with the exception of Dunton. A pompously written resignation from him had been received by the president of the fire department. An informal meeting was called, and by general acclamation the resignation was accepted and his successor appointed. After the parade the boys sought their girls for the dinner and a few hours' amusement about the grounds. A grand time they had, too, and it was "fireman's day" in every sense of the word.

But as all things have an end, so the dinner and hour of recreation for the fire boys came to a termination, and the chief's trumpet brought them to a rally near the flag pole, where the fire engines were "corraled," so to speak. Phil and his companions were prompt to respond, and then the chief announced the programme of the sports.

"First on the list is a race between the four fire companies for a distance of one hundred and fifty yards, the one covering that distance in the quickest time to win the prize of a silver fire trumpet."

Lots were drawn, and it fell to Phil's company No. 4, to run the course first. They did it, and made such good time that they won the trophy by four seconds from their nearest competitors.

The next trial was declared to be a foot race of one mile, between representatives from each one of the fire companies. As Phil was the swiftest of foot in No. 4, he was selected as their representative. The track was staked out and sawdust sprinkled upon it. It was twenty laps to the mile, and competent timers and judges were appointed. The prize consisted of a gold watch.

While they were making preparations for the race Phil was given a sudden start at sight of Dunton in the crowd. The young villain stood back of the others and was regarding Phil with a vengeful leer. While the young fireman did not fear the villain, it nevertheless had a dampening effect upon him to know that he was present.

The participants were brought to the line, and there they stood waiting for the word. When the word was given at last a wild shout went up, and like the wind the contestants sprang forward. Round and round the track they ran. But Phil outfooted all, and was several laps ahead, so that it was seemingly a certainty that he would win the race. Fate had ordained, however, that victory was not to perch upon his banner that day.

Running easily with a good lead, Phil was congratulating himself upon his good fortune, when suddenly he experienced a terrific shock, and placing both hands to his head, fell in a seemingly lifeless heap in the sawdust path.

A cry of horror went up from all, and in an instant the ropes were broken and tender hands were transporting the young fireman to the nearest house, where relief could be given him. Everything, even the race, was forgotten in the horror and solicitude of the moment.

In less time than it takes to tell it Phil had

been placed upon a bed and a physician stood over him. At first it had struck all who had witnessed the catastrophe that the unfortunate youth had overtaxed himself and dropped in a faint, or stricken by death. It required but a brief examination, however, to disprove this theory, and the physician lifted the young fireman's head, from which blood was streaming, and revealed a furrow cut through the scalp and along the skull.

At this moment Phil came to with a gasp. He moaned in an absent manner with the pain, and then seemed to come to his senses with a readiness which instantly assured the doctor that the wound was not a serious one.

"But what caused it?" asked Colonel Rippleton, who was by Phil's side from the first. "Could he have done it in falling?"

"No," agreed the doctor, in his methodical way. "He was shot with a gun which made no report, or, in other words, an air gun. I know this by the nature of the wound. Striking in the spot it did, if it had been a rifle the bullet would have been driven through his brain. But the air gun had not the necessary force, although the young man may be said to have had a close call."

The doctor's statement was brief, logical and conclusive. He washed and dressed the wound, making sure that the concussion had not affected the brain, and then Phil was allowed to get upon his feet.

What loud demonstrations of joy greeted Phil when he came out of the house, and, getting into Colonel Rippleton's carriage with Agnes, was driven back to the parade ground. Everybody crowded about insisting upon shaking hands with him. Finally the sports were resumed, this time Phil becoming a spectator. But he was as proud and happy as a king by Agnes Rippleton's side. Everything now began to resume the happy aspect so rudely broken for a brief space. But calamities never come singly, and the ill events of the day were by no means over. While the merrymaking was at its greatest height there came a sudden lull, a shadow of evil portent seemed to fall upon the happy villagers, and the premonition found sudden verification in the startling clangor of the fire-bells.

"My God!" passed from lip to lip, "the blow has come. The Rippleton Mills are on fire."

CHAPTER V.—The Great Fire.

What more terrible, thrilling breaking up of the gala day could be imagined! Two-thirds of Fisherville's population were dependent upon the Rippleton mills. With such an industry prostrated the serious results were easy to reckon. Famine, and, possibly, starvation might ensue.

With wild, hoarse cries the crowd surged in the direction of the mills. Phil Mason, with the first stroke of the bell, regardless of his feeble condition, unheeding Agnes's cries of remonstrance, sprang out of the carriage, and in a moment was with his brother firemen.

A great cloud of smoke and flame was bursting out from one corner of the mill. If it was not soon reached the total destruction of the mills would become a certainty. Now a cry of horror

burst from all as it was seen that the flames were breaking out from another part of the mills.

Down the hill rushed the fire company. Already Colonel Rippleton could be seen driving madly into the mill yard with Agnes in the carriage beside him.

One end of the mill was in a state of hopeless destruction. It was readily seen that no power on earth could save it.

Colonel Rippleton groaned as it appeared inevitable to him that he must lose his mills.

Step by step the fire stubbornly drove the firemen back, and finally all hope had to be abandoned.

The purpose of the firebug had been gained. The Rippleton Mills had been burned. More than half the population of Fisherville were deprived of employment or business, and the feeling against the incendiaries was very bitter. If Barton and Gruller could have been caught by the distressed and maddened factory folks, there is no doubt but that they would have been lynched. But not a trace of them could be found. In a copse near the mill an air gun was found. This settled beyond all doubt the fact that it was one of the incendiaries who had fired the cowardly shot at Phil Mason.

Poor Colonel Rippleton was plunged into the deepest of financial distress. The insurance companies had always been loth to take a risk upon the mills, and what he had been able to place was a mere trifle of his loss. Though the colonel did not allow himself to get dispirited, he was nevertheless downcast and impressed with the desperation of his situation.

But every dark cloud has its silver lining, it is said, and the colonel did not wholly lose courage. There were better things in store, though his cheerlessness of mind was not by any means enhanced when, upon returning home, he was astounded to find the audacious Jim Dunton cheekily domiciled in the library, awaiting his return.

The astonishment of the worthy but depressed colonel may be more easily imagined than described at sight of the villain, who coolly arose to greet him as he entered.

"Oh, colonel," exclaimed the sharp schemer, "I thought I'd come over and extend my sympathy and services to you in your misfortune. Kind of hard luck, ain't it?"

"Indeed, that was thoughtful of you, Mr. Dunton."

All the while, though, he was smitten nearly dumb with the cool audacity of this man whom he actually had good reason to believe was the real incendiary of his mills. The colonel had encountered many villains in his life, but never so thoroughly cool, masterly a type as this man Dunton.

"When a man is in trouble he needs friends," commented Mr. Jim Dunton. "I have always tried to convince you, Colonel Rippleton, that I am your sincere friend."

"I have never disputed that," said the colonel sarcastically. "Did you wish to see me upon any other matter to-day, Mr. Dunton?"

"Well, I—that is to say," stammered the disconcerted Mr. Dunton, "I called to extend you my sympathy for your misfortune."

"For which I have thanked you."

"Do you value it?"

"For its worth."

"You are uncivil, Colonel Rippleton," Dunton exclaimed angrily. "Why should you treat me like this? What have I ever done to harm you? But I think I can see it all. This upstart beggar of a fireman, a common, untutored hireling in your mills, has perverted your good taste and judgment, and——"

"Sir!" thundered the colonel. "Do not forget yourself. You are in my house."

"I am making no personal allusion," persisted and corrected Dunton. "Believe me, Colonel Rippleton, it is my earnest desire to do you a kind service. I want to open your eyes with regard to this Phil Mason, who is a viper."

"When you insult that boy you insult me," declared the colonel, pointedly.

The young villain started as though he had been shot.

"What!" he exclaimed, sneeringly. "Has it gone so far as that, Colonel Rippleton? Would you give your daughter to a beggar, an ignorant wretch like Phil Mason?"

"I will condescend to correct your understanding of my words," said the colonel. "There is nothing between my daughter and Phil Mason but friendship. Yet, if I were to marry my daughter to-morrow, I would more cheerfully bequeath her hand to Phil Mason, with his honor and his poverty, than to you, sir, with your wealth and your rascality."

"You are making a hard accusation against me, Colonel Rippleton. What have you to back it up?"

"My own eyes. The affair at Phil Mason's house is enough for one thing. Then there is another matter which the detectives will some time bring to light."

This was an indiscreet statement for the colonel to make, and he regretted it. Like lightning Dunton grasped his meaning, and he smiled with sardonic delight.

"I see that young beggar has succeeded grandly in poisoning your mind against me," Dunton said. "But I must, in justice to myself, make this assertion: that in no way am I implicated with any gang of incendiaries, or am I responsible for the burning of your mills, sir. Such an insinuation is the cowardly, two-faced invention of Phil Mason, whose true character you will find out some time. You have misjudged me from first to last. I wish to be your friend, Colonel Rippleton, and upon the spot I urge you to consider the proposition I have to make to you. I am rich. I can build your mills and set you once more upon your feet. This I will gladly do if you will favorably consider my respectful suit for Miss Agnes's hand."

"Spare further talk," exclaimed the colonel, with difficulty controlling himself. "I would see Agnes laid in her grave before she should become your wife, James Dunton. Take my answer once for all and go."

After leaving the house Mr. James Dunton, muttering vengeance beneath his breath, strode rapidly away down the village street in the direction of his home. But just before he reached

the gate he seemed to act upon impulse and changed his course, walking through a side street or lane, which soon brought him into the outskirts of the town and near to a large grove. Suddenly a man emerged from the cover of the trees and held up his hand as an evident signal. It was an unobserved and secure spot for a secret meeting, the appearance of which this had.

A strange light came into Dunton's eyes, and he waved his arm in reply. A moment later he was by the man's side in the shade of the grove. The man whom he thus met, apparently by appointment, was no other than the principal of the firebugs, Gabe Gruller. His manner was excited and his voice hoarse as he exclaimed:

"Well, so yer have come at last, have yer, Jim Dunton? Reckon you ain't any too prompt with keeping your appointments. It's been three days since the job was done all safely, an' we haven't seen a sign of ye."

"I was delayed," rejoined Dunton carelessly, thrusting his hands into his pockets. "But what is your great hurry, anyway?"

"Hurry?" exclaimed Gruller, angrily. "That's a pretty question to ask. Have we not got to get out of the country pretty quick? Confound it, there are detectives upon our track in this and every town about here. We are in a hot box, I tell ye. It's easy enough for you to talk, but then if we are caught I reckon it will go about as hard with you as with us."

Dunton started violently.

"What! Would you, if caught, implicate me?"

"Not if we are paid the money fair and square. It's about time we had it. Have ye got it with ye?"

There was a dark, inscrutable light in the villain's eyes. Treachery was the prime element of his nature, and if in any way he could get out of paying his hired tools the stipulated sum for setting fire to the Rippleton Mills, he would not hesitate to accept any dishonorable scheme to effect that purpose. But the implied threat of Gruller brought him to time. Reluctantly his hand was drawn forth from his pocket with a roll of banknotes in it. Gruller seized them eagerly.

"That's the talk," he cried. "The amount is right, is it?"

"Yes," declared Dunton, positively.

"To make sure I'll count it," and Gruller ran over the green bankbills with his fingers. As he turned up the last one an expression like a thunder-cloud came over his face, and an oath dropped from his lips.

"Confound it, this is not right," he cried. "There's only a thousand here."

"That's all I agreed to pay you," declared Dunton, coolly.

"Look here, Jim Dunton, that trick won't work. My pard and I took hard chances to do your work, and we did it well. Two thousand dollars don't half pay us. I've been on the downward track for ten years, and anything I might add to my list of crimes wouldn't go any further toward insuring my soul's destruction. Now, if you don't fork over that extra thousand dollars, as per agreement, as certain as my name is Gabe Gruller I'll have your blood upon my hands, for I will kill you!"

CHAPTER VI.—A Daring Act.

As vigilant as a sleuth-hound was Phil Mason upon the track of the firebugs. Since the burning of the mills the young fireman had left no stone unturned to ferret out the incendiaries. Of course, there was no doubt in his mind but that they were the same men who had first attempted the dastardly deed, Gabe Gruller and Dan Barton.

Poor Dayton, the detective, was yet laid up with his wound, yet he directed Phil in many of his plans. But Phil was getting to be quite a detective himself. It occurred to him that to keep a close watch of Dunton must sooner or later bring him news of the firebugs, for where was one there must of necessity be some connection with the other. That is to say, knowing that Dunton was in collusion with the firebugs, he undoubtedly held secret council or communication with them.

With this resolve he began to change his tactics. He hovered about the Dunton mansion, and whenever Jim Dunton emerged therefrom he shadowed him.

The young fireman had for several days kept quite close track of Jim Dunton, and one morning saw him emerge from the railway station and strike out for his house. Some motive impelled Phil to follow him. How the villain became conscious of the fact Phil never could guess, but, turning a corner suddenly, when the young fireman reached the spot, Dunton confronted him, having waited for him to come up. There was a deadly light in Dunton's eyes as he faced his foe.

"Now I've caught you," he gritted, savagely. "What are you following me for?"

Naturally taken aback, Phil was at a loss what to do or say. It was some moments before he recovered himself sufficiently to make reply.

"I do not care to give you my purpose in following you, Jim Dunton," he said, fearlessly. "In other words, I have no explanation to make."

"Then I conclude that you are a sneak, and are tracking me for no good purpose. Therefore, I am warranted in extreme measures, and give you fair warning that if I catch you at this trick again I will shoot you like a dog."

As he spoke a pistol gleamed in his hand. In a moment Phil's blood was up.

"Spare your threats, Jim Dunton," he exclaimed, sharply. "You will find that not only I, but others will follow you until a certain piece of villainy is brought to light."

In an instant the cat was out of the bag, though for that matter Dunton may have guessed the truth in the first place. This was, perhaps, a trifle injudicious upon Phil's part. The young villain's face shone with evil triumph.

There was a startling sound of rattling wheels and flying hoofs, followed by wild, piercing screams of terror in a woman's voice. Both looked up to behold a thrilling spectacle.

Down the village street like the wind came a brougham, drawn by a maddened pair of runaway horses, and in which sat a lady, shrieking and wringing her hands. The reins were under the horses' feet, and the coachman was lying stunned in the road some distance back where he had been thrown. Eternity seemed yawning to receive the occupant of the carriage. The sight burst sud-

denly upon the view, and there was but little time in which to act. But, brief as that time was, brave Phil found it sufficient. As for Dunton, he stood petrified and gasped:

"Egad, if it ain't mother!"

In an instant fearless Phil had sprung into the path of the terrified horses. On they came like the wind. The next moment he had the reins and was clinging to the swaying carriage pole. Before a hundred yards had been covered he had them under control. Stopping them completely, he mounted the driver's box and drove them back to the spot where he had left Dunton. The crowd which had assembled cheered him wildly. But Phil's first thought was of the lady occupant of the carriage. Dunton had called her "mother." She lay back upon the cushions, breathing heavily, and pale from her fright. It was plain to see that she was an invalid. It was the first time that Phil had ever seen Mrs. Dunton, and he gazed at her with a curious thrill. There was little to associate in looks at least between Mrs. Dunton and her son. Phil could hardly believe that she could be Jim Dunton's mother.

"Oh, I was so frightened," she exclaimed, recovering a trifle. "James, my son, are you here? I am glad of that. Is our driver badly injured? Oh, here he is, and thank heaven not badly hurt. But that brave young man who stopped the horses—where is he?"

Dunton vouchsafed to get into the carriage by his mother's side. His quarrel with Phil was for the moment at an end. But Mrs. Dunton persisted in her desire to see the young man who had saved her life.

With this Phil advanced modestly to the carriage step, and, removing his hat, exclaimed:

"I beg you will consider it but a slight service, madam, and I am very glad to have been able to render as much."

"It was a brave act," cried Mrs. Dunton. "What is your name, sir? I must make some return for the deed. Pray consider me—"

She paused with a strange start. Phil's handsome face was brought wholly to her view now, and with a swift suddenness a great change came over her. Her eyes dilated, a wild delicious cry burst from her lips, and but for Dunton's restraining arm she would have leaped from the carriage.

"His name is Phil!" gasped from her lips, but that momentary revelation of her physical system. With the sentence uttered she sank back in a dead swoon.

By this time the crowd had mounted the box again. The crowd gathered silently about the carriage, but Jim Dunton waved them back, saying:

"My mother has unsettled her mind. Drive home, William, as fast as you can."

The carriage rolled away, and the crowd dispersed, but a mysterious impression had been left upon Phil Mason's mind, which he could not understand. As he made his way home he pondered over it. There was something in the invalid Mrs. Dunton's sweet, pale face which stirred him strangely. He yearned to go to her and offer her comfort. Was it pity? Was it a golden strange love? Yet she was the mother of the worst foe he had in life, the man who had nearly

Dunton parted with his hireling Gruller in anything but an amicable manner, but had nevertheless passed Gruller over the other thousand dollars. Then he started for his home. Just as he neared it he was surprised to see Lawyer White ascending the steps of his residence.

"What the mischief does he want here?" mumbled Dunton to himself.

He entered the door softly and listened to his mother say:

"I received your letter, Mr. White, and am pained to learn of the erring ways of my son James."

"I thought it my duty to communicate with you," said the old lawyer.

"I fear I have done a wrong thing in giving him control of the property."

"I think you have, and you should assume control once more yourself. If you do not I fear it will not be long before you will be bankrupt and disgraced."

Then the lawyer started for the door to run plumb into Jim Dunton before he could retreat. Jim rushed at the old lawyer and exclaimed:

"You would ruin me, would you. I'll break every bone in your old sneaking body."

CHAPTER VII.—Phil Looks Into the Past.

With his many other accomplishments Phil Mason was an amateur oarsman. With his savings from work in the mill he had purchased a trim little working-boat, and almost daily after work rowed upon the river. After leaving Jim Dunton and his mother to drive home in their phaeton, Phil had struck out in the direction of the river. His mind was in a sort of ruffled state, and he felt like taking a spin on the river to compose it. But when he reached the boathouse he received a surprise. He heard a light, merry laugh behind him, and a tripping step, and, looking up, was face to face with pretty Agnes Rippleton.

"Phil Mason!" cried the village beauty, "are you deaf? I have run so fast to overtake you that I am quite tuckered. Dear me! I shouted with all my strength!"

"Indeed!" exclaimed Phil, rapturously. "I did not hear you. But my mind must have been wandering."

"You are very much given to wandering of mind of late," said Agnes, solicitously. "I fear you are overworking yourself mentally, Phil."

"Pshaw! it is nothing. Yet to tell the truth, the events of the last month have weighed heavily upon me, and perhaps I am too morose and moody. Oh, if I could only accomplish my object and bring to justice the men who fired your father's mill!"

"I wish you would succeed!" cried Agnes. "But I have better news. My father has found friends in Boston who are willing to advance him money to rebuild the mills."

Phil's heart gave a leap.

"Oh, I am so glad!" he cried. "That is the best of good fortune. It will seem so good to have the mill rebuilt."

"I will tell you something more."

"What?"

The young girl lowered her head and averted his gaze. Phil, of course, was consumed with curiosity.

"I ought not to tell it."

"Wait a moment," said Phil.

He unlocked the boat house door, placing the light shell boat in the water. Then he assisted Agnes to a seat in it, and a few sturdy, sweeping strokes carried them far out on the smooth surface of the river. Here Phil laid back upon his oars.

"It was a preposterous thing," said Agnes, with a half angry gleam in her eyes. "That young scoundrel, Jim Dunton, actually had the presumption to come to papa and propose to help him with the condition that I marry him."

Phil's whole frame was on fire. The very mention of the thing frenzied him.

"The miserable cur," he began, and then checked himself. "Your pardon, Miss Agnes. I had forgotten myself."

"No, Phil," said the young girl, gravely. "He richly merits the appellation. Have no fear, though. My father would never see me marry Jim Dunton. He would rather see me dead."

Phil drew a hard, sharp breath. He braced the oars between his knees and then, impelled by an uncontrollable impulse, he took one of Agnes' hands and said in a husky voice:

"Agnes!"

The young girl's face was scarlet.

"What?"

"If I should ever happen to get rich, to become a man almost as fine as your own father—I do not aspire to ever become his equal—would—would you—"

Something stuck in Phil's throat. How he would have wished it would have been hard to say. But pretty Agnes, with all a woman's tact, knew how to fill the gap. She looked him squarely in the eye and said:

"Yes, Phil, I would."

We will not write the happy, glowing expressions of youthful trust and happiness that followed. But when Phil drew his boat up once again at dusk to the little landing and assisted Agnes out, he was one of the happiest young men that ever walked the streets of Fisherville. Phil solemnly saw Agnes to her home, and then returned home and himself, halting plans all the way. The future looked to him then all a rosy hue. With the love of such a girl as Agnes Rippleton, he felt that he could overcome any obstacle. But before he reached the door of the humble cottage in which he and his mother lived, a subject which had been awakened in his breast that afternoon recurred to him. He entered the cottage and found Mrs. Mason awaiting him with a cherry meal spread upon the table for him.

"Mother," said Phil, taking one of her hands in his, "I had a strange dream last night. I thought I was in a beautiful house. There were many fine people all about me, and one of them seemed to be my mother. But, forgive me, mother, it was not you. That was painful to me, and yet I am very happy."

Phil watched his mother's face closely. He saw her start and turn pale. The ghost had told.

"Oh, Phil, from my heart I have a mother's love

for you. But I cannot refuse you the truth. You are not flesh and blood, my son."

Covering her face with her hands the good woman sank back into the chair. In an instant Phil had his arms twined about her neck.

"You are the only mother I have ever known," he cried, impetuously. "And as such I love you."

"I will tell you all," said Mrs. Mason, wiping tears from her eyes. "We lived, my husband and I, in a town one hundred miles from here. We had only one child, a little boy, who died at four years of age. I was so deeply attached to him that I mourned myself almost crazy over his loss. At this time a stranger came to the house with a bright baby boy. He said its parents were dead and he was trying to find it a home. A matter of a hundred dollars went with the child as its legacy. I was captivated by the little innocent, and concluded to take it and adopt it. I did so. From that day to this I have never seen that man. Need I say, Phil, that you are the child, now man grown?"

For some time after this Phil sat with bowed head and thoughtful mien. It was some time before he aroused.

"I wonder who my parents were?" he mused, in a broken sort of voice. "So the man said they were both dead. I shall never see them in life."

"I have tried to fill the place of a mother to you, Phil," said Mrs. Mason.

"And you have," cried Phil impulsively. "It was God's good will that gave me into your care. I will never forget you, mother."

Phil crossed the room.

"Wouldn't it be queer," he said, in a thrilling voice, "if some time my parents should turn up alive and I should meet them! For I may have been stolen from home, mother. Hark! What was that?"

Ah, it was a familiar and thrilling sound to Phil Mason. From the distance, borne upon the night air, came the terrible clangor of the fire bells. Clang! Clang!

Just as James Dunton advanced toward Lawyer White Mrs. Dunton appeared on the scene, and Dunton rushed up to his room, hurling maledictions against both Lawyer White and his mother.

He seated himself at a table and muttered to himself thus:

"She little thinks I know that I am only an adopted son, taken by her from the Newton Foundling Asylum. But I saw the papers in her desk one day while I was looking for some money, and I have them secreted in my desk. I must take matters in my own hands now."

He got up and went to a closet, took a bottle containing a powerful drug off a shelf and quietly descended to his mother's room, where he found her apparently asleep on the sofa. He had saturated a rag with the drug, and just as he was stooping to place it over her face she opened her eyes and exclaimed:

"Why, James, what does this mean? What are you doing?"

His powerful hand seized her throat, and the rag was pressed over her mouth. The woman succumbed to its powerful fumes, and was unconscious.

"Confound it all!" Dunton muttered. "She recognized me!"

He then rushed upstairs, saturated a lot of clothing with alcohol, carried them downstairs and set fire to them; then he rushed out through the back way.

So the alarm of fire which had called Phil Mason from his home proved to be that of the Dunton mansion. When the fireboy's arrived the house was one mass of flames. Not knowing whether anyone was in peril or not, Phil dashed in and succeeded in reaching Mrs. Dunton's room, although suffering severely from the effects of the smoke. There he saw that lady lying unconscious on the sofa. Phil picked her up and carried her to the window. He was sick and faint, but he had strength enough to lift Mrs. Dunton's unconscious form out upon the ladder. Brave Jack Rodney was there ready to receive her, and he shouted:

"Did you find her, Phil?"

"Yes, Jack."

CHAPTER VIII.—The Agonies of Remorse.

If a bomb had been thrown into the crowd a greater shock could not have been experienced. From lip to lip went the astounding report that Mrs. Denton had been taken from the burning building under the influence of a drug. What did it mean? What mystery was this? Fisherville was never so shaken up as by this startling re-

Mrs. Dunton remained at the house of a neighbor until they could be rebuilt. Those who had seen her before the fire scarcely knew her now. Her face was haggard and aged many years beyond her due. Her frame was attenuated, and she was truly an invalid. Brave Phil Mason had not been forgotten by her. She extended a request that he should call upon her, which Phil did. It appeared that no other person was in the room, and while Mrs. Dunton thanked him warmly for his great service, she seemed to enter the influence of a strange, powerful emotion, which somewhat strangely was shared by Phil.

"You must come and see me often," she said warmly, almost warningly, as he went. "I can tell you, and that should remove all diffidence between us. More than that, Phil, I am very much interested in you. I will tell you when I have time to do so, and you must tell me when you have time. Of course it is only my duty, but it will cheer me greatly, Phil, if you will come to see me often."

Phil bowed modestly with a fluttering feeling about his pocket. As he was going, Mrs. Dunton handed him a roll of paper in his hand. As Phil unfolded it, he was dumfounded to see that it was a check for one thousand dollars. He gave a little jump and said:

24. "You're kidding me, right?"

"I don't know," I said. "I've never seen any of them before."

11. The following table shows the number of people who attended the concert in each age group.

of a neighboring city came out with the following startling declaration:

“To Whom It May Concern.—I wish to make statement that from this day forth I free from all bonds my adopted son, James Dunton, that he is no longer entitled to my consideration or recognition, and that I shall pay no debts contracted by him after this date. Virtually I disclaim him as my son.

"Mrs. Henry Dunton."

It was the first intimation to Phil as well as others that James Dunton was not flesh and blood relation of the Dunton family. The effect can be imagined. Excitement ran high, and all sorts of reports were circulated. The mystery of the fire instead of being made clearer was intensified.

But after leaving the house that fateful night Dunton felt as though he had killed a man. Already his guilty soul was stricken with remorse, and the truth stared him in the face that his villainy had ruined him. He fled on through the night, a type of Cain, his whole being seething with fearful emotions. In that moment of remorse he would have given half his life to have enjoyed the freedom of spirit and peace of mind which he knew belonged to his hated but upright young rival, Phil Mason. The way of the transgressor is indeed hard. In a terrible fever of excitement Jim Dunton reached the village and gazed back at the pyramid of fire which the house now made outlined against the sky.

He made his way out of the town and walked toward the railroad track. An idea had occurred to him in his mortal dread of arrest that he had better seek temporary safety in a neighboring town. Accordingly he walked five miles that night to another station where he took a morning train. He went to a hotel, but not to sleep. A morning paper had an account of the fire, and Dunton's hopes turned cold as he read a graphic account of the plucky rescue of Mrs. Dunton by Phil Mason.

"Heavens!" he gasped. "I'll never dare to return there now. I'm a goner."

With a terrible haunting fear he walked or staggered out upon the street. How changed everything was. How different the world looked to him. His constant attendant was fear, and the direful fancies filled his mind. Every tree box was a detective, every corner held a lurking officer of the law ready to seize him. Shivering, agonized in mind, he walked on, until a hand touched him upon the shoulder. As though shot he recoiled, and was only brought to a halt when he saw that the man who stood before him was Gabe Gruller, his hired tool and the ringleader of the incendiaries.

"W-what's the matter with ye, Dunton?" cried the ruffian in surprise. "What are ye jumpin' about like that fer?"

CHAPTER IX.—The Downward Path.

"Jumping about," growled Dunton, savagely.

"What

But she pulled her face, and did not

deceive Gabe Gruller. He looked at his employer searchingly, and then with assumed carelessly said:

"Frightened, was ye? An' at something less than a shadder. Tell ye what, pardner, that's a sign of a heavy conscience."

"I think the devil is against me, Gabe," Dunton ejaculated. "I am having beastly luck."

"Is that so?" exclaimed the villain, idly. "I hear that yer house was burned last night. Who drugged the old lady?"

Dunton recoiled with a gasp and a changing pallor which betrayed him as plainly as words could have done. Gabe Gruller laughed in his coarse fashion.

"So ye tried the little shuffling-off game ye'self, did ye?" he said quietly. "You're a good one. No wonder ye failed. Why didn't ye come and get an experienced friend to help ye, who would have done the job up for a little money."

I never was sick at heart. He knew that Grady had told me the truth, and all attempts upon his part to deceive him would be useless. Pen cannot control the force of his mind. Inwardly he was a world of trouble. It was no light matter that he should thus get a grip upon him. Nevertheless he would not admit the truth, and the hungry, with a rough string of the shoulders, growled:

"Oh, well, keep it to yourself, then. But we can't fool me, Jim Baxter. Why don't you go home now? Don't matter, I guess. Look here! Don't be a fool. I'll be a friend to you. You may as well come in and give the gang a good time."

"What gang?"

"What, our gang, the gang! We can work together, and we can do some business. Yer on yer feet, and yer had better pick up a friend who's got a gun. More than that, if Dan Barton an' I want a hand, we could make trouble for ye."

"No, no, no, no. I'm not a-tallin' pity on you, for I know you're in a bad fix."

"How do you know so much?" retorted Barton, "I haven't asked help from anybody yet."

"...per way," said Gabe Grueller sullenly. "I'll come to it some time."

He had secured lodgings in an obscure
house in the town. He retired to these and gave
up a sort of despairing reflection upon

terror of being hunted by a

ring to venture out. For all he might know of his dastardly at-

1. The first step is to identify the problem. This involves understanding the situation and the goals that need to be achieved. It is important to gather all relevant information and to define the problem clearly.

his turned to dishonest
zed that he had done an
Coke Guller's offer of

Gabe Gruller's offer of
in. He set out to hunt

... somewhat cool-

do with ye. We will

and mebbe she's got

"Well, I'm with you."

"All right. Come around to-night, at seven sharp. We can run up to Fisherville in an hour, and we'll go right to mother's. Be on hand."

Promptly at the hour named Dunton joined the villainous Barton and Gruller, and they boarded the train for Fisherville. An hour later they were at the door of Mother Gruller's dilapidated cabin, where once before a dark scheme of incendiarism had been planned. The door was opened by the old crone, who stared at Dunton.

"He's all right, mother," cried Gruller. "He's one of us now."

"Eh?" chuckled the crone. "There's allus new recruits, allus new ones. Come in, gentlemen."

Rubbing her hands, the crone motioned them to seats, and then the conference was on foot. Seated at a tumble-down table, Gruller opened the talk.

"Yer see, mother, he's kind of green like, wants breakin' in. But he's got good grit, I reckon. Can't we give him some easy job?"

"I reckon we kin," said the old woman, slowly. "Have ye had a bad falling out with yer mother, young man?"

"Rather bad," said Dunton, with a grimace.

"I should say so," laughed Gruller.

"Well," said the crone slowly, "there's more'n one way out of a fix. I guess we kin find a little job for ye. I ain't been studyin' up much lately. Oh, I've got it."

The crone raised her bleared eyes and fastened them upon Dunton with such keenness that the villain felt uncomfortable.

"Ye can't get any more favors from yer mother?"

"No," replied Dunton.

"I'll tell ye a bit of news right here. Yer mother an' I used ter be good friends like. Oh, I warn't an old hag then, to be sure. I was as likely a woman at forty-five as ye ever see, and made my wages fair and easy like. For meeses in them days used ter git good pay."

"Them was better times fer our family."

"That was when ye was a toddler, me boy," continued the crone, "and the Grullers was re-
sponsible for this. I was born for
Mr. Henry Dunton in them times, when her baby
boy was born. It was stolen away, or fell into
the river, nobody knew which. Now what ye want
to do is this: Go to her an' tell her that ye don't
expect any more favors of her, but ye have made
a big discovery, and for a sum of money you will
give it to her. Make the sum five thousand dol-
ars, for she'll give it to ye. Then bring it to
me, and I'll undertake to Mrs. Henry Dunton's
satisfaction to prove that you are her lawful and
legal first-born child—her own flesh and blood.
For hark ye! I can prove it to her, and in spite
of all that ye've done she will not cut ye off—she
cannot cast out her own."

CHAPTER X.—A Deep and Shrewdly Won Game.

"Enough!" cried Dunton, springing to his feet. "Why, know you, woman, that if you can do that I am sure to gain the heritage?"

"Well, I will do it."

it, for I will have you arrested now. It was years ago, but no court of justice in this country will refuse me my rights. My time for revenge has come."

The nobility—more, the grandeur of her manner appalled the two schemers. But Mother Gruller could play a desperate game, and she changed her tactics instantly, feigning grief and getting down upon her knees.

"May the Lord love ye, Mrs. Dunton," she cried. "But I've been that sorry fer what I did I could hev killed meself. It's a lovely lady that ye are, an' I'm going ter make up fer the past, fer I'm goin' ter give ye yer boy back."

The agonized mother reeled back with a hand pressed to her brow. The wild, maddening hope was supreme.

"You will give me my boy back?" she cried, in a hushed tone. "Well, if you can do that, though it is late, I'll forgive you. Where is he? Oh, if he is alive let me gaze upon his face!"

The crone took from beneath her shawl a small bundle. Undoing it a number of pieces of baby garments were revealed. At sight of them a wild cry burst from Mrs. Dunton's lips.

"You know 'em, don't you?" cried the hag. "Yes, they were the clothes yer baby wore when he was stolen away. They are dear to ye, an' ye shall have 'em now."

With this Mother Gruller motioned to Dunton, who instantly removed his coat and bared his left side. Mother Gruller pointed to the strange birthmark and cried:

"Do you know that?"

Mrs. Dunton gazed at it, and then a fearful cloud passed over her face.

"My boy had one like that," she said.

"Yes," said Mother Gruller, "that is your lost boy's birthmark. Your boy was taken to the Newton Asylum, where he lived three years. Then you went there to adopt a child to take his place. This child looked the most like your lost one, and you adopted him. But you did not dream that in doing so you had really adopted your own son. Now, for I know, and I ought to know, that this is your own boy."

And terrible was the scream which poured from Mrs. Dunton's lips. With a gasp, she stepped forward to her throat, and with clutching of teeth, she retreated to the furthest part of the room.

"It is not my flesh and blood. You utter a lie, Ann Gruller! Never! never!" she cried.

"Look at that!" pointed the hag, pointing to the adroitly made birthmark. "Would that lie? I tell you I know what I'm talkin' about, and this is your own boy. You must have lost him once!"

And so, by the power of the crone's cunning, she gained a strange influence over the mother. Mother Gruller's words were like a spell. She was a woman of a certain age, and then a violent and bold woman over the clothing and examined the birthmark.

"Ann Gruller," said the wronged mother, turning to her fiercely, "dare you swear that this is my boy, the boy you stole from me so many years ago?"

"I dare you swear that this is my boy," said Mother Gruller.

The old woman's hand was raised and the oath given. Like a statue Mrs. Dunton stood for a moment looking at the baby clothes upon the floor, then picking them up she started to leave the room. Affecting emotion Dunton held out his hands.

"My mother!" he exclaimed.

"God pity you," she replied, as she paused at the threshold. "You must be denied a mother's love. It may be an unnatural instinct upon a mother's part, but I can give you no love. I will not betray you to the law or discard you, but I cannot either acknowledge you. Yet the law of humanity shall not be ignored. My duty I will subserve and you shall have an income and the rights of the heir of the Duntons. Disgrace it no further, and remember, that for which you now ask, my love, you can never have, for henceforth you must look upon your mother as dead."

CHAPTER XI.—Phil Indulges in Some Sharp Detective Work.

The game was won. Jim Dunton knew this when the door closed behind Mrs. Dunton, and he was left alone to usher Mother Gruller out of the room. He returned with the old crone to her shabby abode, and there after a consultation of something like an hour he left her. It was scarcely a day later when the report leaked out and all Fisherville received another tremendous shock. The confession of Mother Gruller established Dunton once more in his former place, but that there was no longer even friendly terms between mother and son was too plain a fact to be concealed from public notice.

Since the burning of the Dunton house not a fire of any kind had called out the fire boys. Phil had therefore had good opportunity to give his time to some sharp detective work. And good luck enabled him to get hold of a valuable clew. The villains whom he was tracking were most adroit, but even the shrewdest are not infallible, and there came a time when a serious mistake was made, and of which Phil was quick to take advantage.

Mother Gruller's cabin now became an object of the young fireman detective's constant observation. He hovered about the place nightly until a late hour, and his efforts were at last rewarded with success. One night at the hour of eleven, after he had been watching the place for over two hours, the door opened, and a man came out. Phil recognized him at once as Gabe Gruller. He watched the villain's movements closely.

Gruller left the cabin and struck out toward the river. Phil followed him closely until the water's edge was reached, when he saw him enter a boat and pull out into the stream. The daring young fireman gazed after him wistfully.

"I can't walk on water," he murmured, "and yet I ought to follow him."

While mulling upon a plan for following the man, Phil received a surprise. A figure appeared behind him, and he had not time to turn out of sight when a man's form loomed up before him in the darkness. Phil actually collided with the villain, who was looking toward him and

walking fast. A muttered curse succeeded, and in that instant Phil, with a great start, recognized the voice. It was that of Dan Barton. Phil was upon him like a tiger.

"Yield, Dan Barton, firebug!" he cried. "You are my prisoner!"

"Treachery!" roared the villain. "Hands off, or I'll knife ye. What ho? Where are ye, Gabe? Help!"

An answering cry came back from the river. But Phil had his man down, and was a certain victor, when an unlooked-for intervention came. There was a sudden rushing sound in the young fireman's ear, and he felt heavy fingers about his windpipe, and an eerie yell in his ear.

"I've got him, Dan! Hurry up, Gabe! Give him the knife! Don't let him get away!"

There were the frantic cries of Mother Gruber, and it needed no more to warn Phil that he had stumbled into a hornet's nest and had more upon his hands than he had bargained for. That was a desperate struggle that followed. Phil was a strong boy and as supple as a tiger. With no interference he would undoubtedly have downed his man, but again the crone came to the rescue—as well as Gabe. Then the tide of battle turned against Phil.

It was at this juncture that it became apparent to him that he must give up the struggle. But fortune decreed in his favor, for at that critical moment the sound of voices and approaching footsteps were plainly heard. *Phil raised his voice loudly:

"Help—help!" he cried. "The firebugs! help! come quickly!"

The firebugs endeavored to finish their young foe in quick time. Failing in this, they broke away and retreated toward the river. Mother Gull was out of sight in the direction of the water. By this time these other birds had been attracted by Phil's cries were upon the spot. Phil explained to them that his mother was gone, and they started in pursuit.

and they started in paddling. Separating, the effort was made to land off the falls. But they failed in this, the villains reaching the river and pulling away in the boat. Another boat was quickly procured, but a fog set in on the river, that it proved very fatal. The boatmen had been told that the prisoners were on the river, and the boatmen, the men paddled to the shore for many days. The river, when it landed in the stream, the boat was found where they had been ashore. Near the spot was a farm-house, and the prisoners felt sure that they had reached the river.

[illegible]

It was in the gray morning light that they sighted the town, and when fairly in its outskirts Phil gave a loud cry at an object ahead in the roadway. It looked like a dingy rag, but upon examination it was found to be a coarse linen kerchief, and upon it in indelible ink was marked the name "Gabe Gruller."

CHAPTER XII.—Captured at Last.

Down into Clifftown drove the pursuers, Phil handling the reins. The hour was early, but Phil drove immediately to police headquarters, for Clifftown boasted of a police force, and the result was a dozen officers were dispatched in various directions to scour the city for the incendiaries. It was decided by Phil and the men he had brought with him from Fisherville to separate, and they did so, each taking a prescribed route. The city of Clifftown boasted of some rough localities, frequented always by hard characters. Many a criminal had found refuge in the place and for weeks baffled the police. Particularly noted was a part of the town known as Flat Iron Square from its shape. Phil bent his footsteps toward this locality, with the firm conviction that there he would find some trace of the firebugs.

A signal had been given the young incendiary tracker by the Clifftown chief of police. It consisted by a whistle, which would at once call any officer within hearing to his assistance. So absorbed was Phil in his purpose of capturing the firebugs that he forgot everything, and could think of nothing but his brave object. By this time he had reached the neighborhood of Flat Iron Square. He was not particularly well impressed with his first view of the locality. When he had first decided to undertake the capture of the incendiaries, he had procured from the detective, Dayton, several shrewd disguises, which he now had an opportunity to make use of.

That they would be of value to him he was well assured. If his men were in the square they could easily watch for the coming of an enemy and would at once recognize him, and easily keep out of his way. Phil was long-headed enough to realize that he could not capture the incendiaries openly.

It must be accomplished by strategy and the disguises offered a good chance. He managed to conceal himself in a dark alley between the buildings, where he hastily made a change in his personal appearance. When he emerged into daylight he would scarcely have been recognized as Phil Mason. Surveying himself in a pocket mirror with satisfaction, he started out for the square.

Affecting the swagger of a common street
lounger, he wandered about the rough locality.
Finally he struck a clew. A man came out of a
beer saloon. His manner attracted Phil's atten-
tion at once as strangely like Gruller. But while
the latter was smooth-faced, this individual wore
a full beard. A momentary glance at the
Phil. Might it not be Gruller in disguise? He
determined to follow him. Down the street he
went, and stood for a moment before the door of
a rickety tenement. A man came out of the door
and accosted him. Phil experienced a thrill. It
was Dan Barton.

oner," he said. "I have always been a warm friend of the young man, the same as others in this room, and it pains me as much as anybody present to be obliged to conduct this prosecution. I certainly hope the young man will prove his innocence."

"You may specify your charges," said the judge.

"I went into my office this morning," said Mr. Harding, in commencement, "and as usual read the correspondence upon the desk. Colonel Rippleton was absent, and I did not expect his return for several days, else I would have allowed the matter to rest until he returned. I noticed a pile of check stubs, which struck me as foreign property, and out of curiosity investigated them. From them I got my cue, and came to the conclusion that the treasurer was employing strange methods of doing business. This belief grew so strong in my mind that I determined to investigate, and sent for a detective and an expert. An examination of the books was made, and a defalcation of nine thousand dollars was discovered."

"How did you know it was a defalcation?" asked the judge.

"Because the checks given were payable to a bank, and were collected through a bank which was not in the city."

"Did the clearing house return those forged checks?"

"Yes."

"You have the checks and books here?"

"I have."

An investigation then followed, and it was proven to the satisfaction of the judge and others that a defalcation had been attempted, and that the name of Phil Mason was upon the fraudulent paper.

"What have you to say, Phil Mason?" asked the judge. "Are you guilty or not guilty?"

"Not guilty," replied Phil, firmly.

"To put this poor signature upon those checks?"

"No, sir. I never saw them before."

"Then you cannot explain them?"

"I cannot, unless some evilly-disposed person forged my name to them, and in some way got access to the books and changed the figures."

A great sensation was created. A buzz of conversation went through the room as the idea was thus suggested impressed all favorably, so strong was the public sympathy with Phil.

"I will wager my life that is the way of it," said Colonel Rippleton, excitedly.

"I cannot," said the judge. "Mr. Hager," he called, turning to a lawyer near, "will you answer this questioning, which I believe is fair in the city of Fisherville. I will take note of the case."

"Will you," replied Mr. Hager, taking the case. "Phil, where were you when these checks were made?"

"I was upon the river," replied Phil.

"I had no idea that the accounts were to be investigated."

"You believed them to be in such a state that an investigation of an ordinary sort would have disclosed no discrepancy?"

"Yes," replied Phil, solemnly. "I knew the ac-

counts to be straight. If they are wrong, then some enemy of mine has in some way got at them and changed them."

"Have you any suggestion as to the identity of the person who would do so mean a thing?"

It was a moment of suspense in the court-room.

CHAPTER XIV.—Out of the Jaws of Disgrace.

Everybody was upon the qui vive for Phil's answer. But he was too frank and honorable to make an open accusation upon the mere ground of surmise.

"I would rather not make any specification just at this moment," he replied. "I would prefer to wait until later in the trial."

"Then you believe, Phil Mason, that your books have been tampered with?"

"They have been changed in some manner."

"Who besides yourself keeps books in the office?"

"Mr. Chauncey Kane."

"Is Mr. Chauncey Kane present?"

"Yes," came a voice from the lower part of the court-room.

"Let him be detained as a witness," ordered the judge.

Mr. Chauncey Kane was brought forward. His manner was calm and unconcerned. Surely he did not look guilty.

"Here are the checks," continued the lawyer, bringing them forward. "Will you swear, Phil Mason, that you did not indorse them, and that that is not your handwriting?"

"I will," replied Phil, readily.

"Were you ever in the bank through which these checks were collected?"

"Never!"

For the sake of having the charge fully substantiated, Mr. Harding had caused the cashier and clerk of the mentioned bank to be brought to Fisherville, and they were present at that moment. Phil was now allowed to sit down, and these men were sworn.

"Can you swear, sir, that to the best of your recollection, Phil Mason is the party who deposited these checks in your bank for collection?" asked the lawyer, Mr. Hager, of the cashier.

"I certainly identify him as answering the description of the same man," was the reply.

The clerk gave oath likewise. The charges against Phil seemed to be substantiated by invulnerable evidence, and he began to realize that his position was certainly a ticklish one. It was only a step to conviction and prison. It seemed more than he could bear, and he felt faint and sick. But with an effort he recovered himself just as the argument for the defense was opened. But Colonel Rippleton, who could not be persuaded of Phil's guilt, demanded an examination of the handwriting by an expert.

"Let there be a handwriting examination," he declared. "I know that will change matters."

An expert was accordingly summoned, and the handwriting was examined. The expert, after a long and careful examination, declared that the handwriting was identical with the handwriting of Phil Mason, and

when at length it was given a sensation was created.

"To the best of my belief," he declared, "the signature on those checks is a forgery."

A sort of wild cheer went up from the crowd. It was the first real point scored in Phil's favor. And now that the tide had set in an opposite direction, it seemed too strong to be stemmed, and additional evidence instantly accrued.

"Can you hear that it is a forgery?"

"That would be absurd," replied the expert. "But I will swear to the best of my belief that the last writing is not at all by the same man."

This was a strong point, but yet not sufficient to turn the scales. The height of interest was reached, however, when the expert called for the books, and began to examine the figures. Scarcely five minutes had elapsed before he declared positively:

"There has been an alteration in these figures. It is the fact that, several matters have been written in."

... ..

"The record that is kept at the banks would balance exactly, and the discrepancy of nine thousand dollars indicated by the forged check would not exist."

Phil's eyes were bright with hope.

"Look here," declared the expert. "I will un-

He held the page up to the light, and there could be plainly seen a faint yellowish color

"You will again swear that you know nothing
of the business of the Boston

"Yes," replied Phil.

• *Journal of the American Medical Association*, 1997; 277: 1001-1005

"Yes; by opening the safe. In order to do that

It is not possible to make a general statement about the effect of the different types of soil on the growth of the different types of plants. The effect of the different types of soil on the growth of the different types of plants is a very complex problem, and it is not possible to make a general statement about the effect of the different types of soil on the growth of the different types of plants.

...the
... ..
... ..

Dr. C. C. Young, Kansas State University, Fort Hays, Kansas, has been elected to the position of President of the American Society of Plant Pathologists. His term of office will begin in 1934. The following are the members of the Executive Committee for 1933-34: President, C. C. Young, Kansas State University; Vice-President, J. H. Harkness, University of California; Secretary, J. W. Davis, University of Wisconsin; Treasurer, J. W. Davis, University of Wisconsin; Editor, J. W. Davis, University of Wisconsin; and Editor of the *Annals of the Entomological Society of America*, J. W. Davis, University of Wisconsin.

He obtained bookkeeping training and made many singular observations on his travels. He was well known in the court-

of evidence to lay down the law. I will be
 pleased with you, Chairman Knapp, if you do not

tell it. You know who stole those books and forged those checks. Was it you?"

"N--no!" cried the terrified fop. "I didn't do it."

"If you don't tell the truth you shall go, too."

"It—it was Jim Dunton."

The name fell upon the ears of all like the explosion of a bomb. Words cannot depict the effect upon the crowd. From lip to lip Stanton's name went. At last Duntzen had entangled himself—literally wound himself up in his own rope. The end of his scheming had come.

It finally an officer was dispatched to arrest him. Chauncey Kara made a fall and absconded with the confession, which, of course, cleared Phil. The young fireman's friends surrounded him with hearty congratulations. Phil thanked his friends heartily and he extricated him self from the crowd and left the court-room.

His heart was quite full. His joy at his fortunate escape from a vile plot was great. But the day's doings were not yet over. As he emerged into the open air his gaze encountered a bright red light against the afternoon sky. The air was filled with the clangor of bells, and the portentous, thrilling cry reached him:

"Fire! Fire!"

CHAPTER XV. How a Fine Chapered P.T.'s Career.

A few minutes later they were at the scene of the fire. A large house, once a fine residence, was in a fair way to destruction. But the promptness with which a stream was gotten upon the building offered hope that it might be saved. This worked like a hammer. He directed the hose and kept his team at the pump with the others, until a fireman, coming down the line toasting with beer, said:

It came as usual. A loud cry went up from a woman who had come up the street in excitement. She was wringing her hands and screaming wildly:

"Oh, my baby—my baby!"

[illegible]

"We have a great history" are the questions posed by the artist G. G. G. G.

"I was in bed in the night when I went to the grocery," she replied wildly. "He was asleep and I was alone at the time. I was sure he was killed alive."

Heard her statement and breathlessly asked:

... ..

"Yes," replied the agonized mother.

With lightning quickness he made his way to the door of the house. It might be possible to rescue the child, and yet it was a great risk. Risk was no longer to Phil.

to do, started for the door of the house. He
after another. But when he arrived upon
now at the far end of the building.

of the house framework was burned away, and he made a surprising discovery.

In a niche between the fastening and the studs was thrust a package of papers. Phil might not have heeded this had it not been for the fact that the papers seemed to have been secreted there.

"Perhaps they are valuable," he thought.

With this he picked them up and thrust them into his pocket. They were forgotten the next moment, as he made great effort to solve the problem of how he was to reach the next floor. An idea finally occurred to him, and he hastened to execute it. Leaning out of the window he found that he could reach up to a niche in the side of the house where the flames had burst through a few moments before. No fire was there now, however, and he managed to get a hold and draw himself up to a point where he could grip the window ledge above.

His daring deed was wildly cheered from below. A single misstep would have precipitated him to instant and terrible death. But he was an agile climber, and managed to draw himself in at the window. He had reached the upper floor. Smoke blinded and for a moment baffled him, but he forced his way through it, guided by the baby's cries. Bursting in the door, the next instant the little innocent was in his arms.

Following its cries, he made his way to a window. How was he to descend to the ground? To jump meant death. Every moment the flames grew hotter. The stairs were gone, and the house was tottering. Great beads of perspiration stood out upon his brow.

There was no hope visible, no means of descent. But time was flying. The very floor trembled beneath his feet, and he knew it must soon give way. In the extremity he seized the sheets from the bed. Knotting them, he made a long rope and fastened its end to the cradle. He placed the baby in this, and then looked out of the window. Just was upon the upper rounds of the ladder ten feet below.

Over the window-sill Phil swung the cradle with its precious load. Down through blinding smoke it went. The next moment rough Jack Dunton had the infant in his arms. Wild was the shout of approval from the crowd. But Phil disappeared. Back into the room he had crept, overcome with the terrible strain. It was with great difficulty that he changed his base so that he could get a breath of air, and this brought him to the rear of the building.

Then he turned to Mrs. Mason. At his waist he found the bundle of papers. Seizing it he hastened away, and disappeared. Speedily he had slipped into the room below. He dropped the papers, and did likewise to the next floor. He could go down no further, for the flames were beneath, but it was far enough, for the papers were within his reach, and he began to read. He was so absorbed that he did not notice the flames until they were upon him. He was saved by the firemen who had just arrived.

When the fire was over and he was alone, he thought of the papers he had found. But he changed his mind, and after he had read the papers he decided to find them. He went to the window and looked out. He saw the firemen and the crowd. He saw the firemen and the crowd. He saw the firemen and the crowd.

Mrs. Mason, upon opening the bundle of papers, at once discovered that they were a pile of closely written MSS., and had she been like Paul, she might have gone no further. It is not by any means desired to cast any reflections upon womanly nature, But Mrs. Mason stifled her repugnance and read the papers. We will not attempt to give them in detail, but suffice it to say that they contained a long and elaborate confession of a man who had led the life of a misanthrope, who had lived for the consummation of a despicable revenge. In summary the confession was as follows:

"My name is Philip Harmon. I am virtually a wreck upon the sea of life, and I owe this unhappy state to my own folly. In younger life I was mad enough to resign my heart to a woman who coldly informed me that she did not love me. In spite of my ardent suit, she would not marry me. I was piqued, stung, maddened by her refusal, having wealth to give her, and was not possessed of the power to bridle my vengeful emotions. I very wrongly allowed them to rapidly gain the upper hand of my better nature. The result was that I determined upon a miserable revenge. I gained my ends, but have reaped the consequent unhappiness of a wretched, remorse-stricken life. The girl I loved, and who had scorned me, wedded another. I was maddened by the truth, and night and day fostered my plan of revenge. My time came. A child was born to them, named Edgar. I conspired with the old nurse to kidnap the child. I succeeded, and in a distant town placed the infant in the hands of a good family named Mason. The child to-day is a popular young fireman at Fisherville. His parents, though the fact is unknown to any in the world save myself and old Mother Gruller, are Mr. and Mrs. Henry Dunton. His father is dead, but his mother yet lives at her villa, unwitting the fact that her son is in the very same town alive and well."

Word for word Mrs. Mason read this comprehensive confession, and then sank back in her chair overcome. A moment later Phil came in and she gave him the papers to read, which he did. When the young fireman had finished this, to him, astounding but important information, words cannot depict his emotions.

"She my mother!" he cried, in strangely subdued tones. "Oh, what a revelation! I can scarcely believe it. Now I understand my strange feelings toward her. My mother! God in Heaven be praised!"

CHAPTER XVI.—Conclusion.

Jim Dunton's mind was not wholly at ease with regard to the possible result of his plot against Phil Mason. If it did not miscarry it would be triumph indeed, and might go far toward the consummation of his fondest hopes. He was accosted one day upon the street by a man of the genuine plug-ugly type, who took him roughly by the arm. He noticed Dunton's name on a card in his hand. Something impelled the villain to read it.

"For Mister Jim Dunton.—yer know I'm in a pooty bad fix, don't yer, old pal, an' I know yer

won't refuse ter help me. Now, I want yer ter git me a hair-saw and a bottle of oil, and bring them to me cell. You kin do it. I must git outer this place. If yer don't help me now mother will peach on ye about that inheritance biz, and you'll lose yer snap. So-long, fer jist now,

Gabe Gruller."

Dunton savagely tore up the note, and roughly abused the plug-ugly.

"Yer'll see, my fine covey," said the latter, darkly. "It'll be the wuss fer you."

Now, with the startling report of the result of the trial of Phil Mason came to his ears, and he was himself arrested upon the implication of Chauncey Kane, the realization came to him too late that he had made the last rascally stroke of his career. When the day of his trial came an array of evidence most formidable was produced, and he was convicted of conspiracy. Hardly had the judgment been given when a confession of Gabe Gruller implicating him as the chief instigator, and directly responsible for the burning of the Rippleton mills was brought forward. The wretchedness of his mind cannot be conceived. He was taken away to prison, sentenced to twelve years at hard labor.

At the trial Mrs. Dunton, believing him to be her flesh and blood and that it was her consequent duty, had employed a lawyer to argue in his defense.

That the act was misplaced, a thrilling and joyful event demonstrated. Phil Mason, with Mrs. Mason and the confession of Philip Harmon, called upon Mrs. Dunton, or as she was to be proved, his own mother. Mrs. Dunton received them pleasantly, without any suspicion of the thunder-cloud so imminent. But when Phil placed the paper in her hand, and she read it, a terrible cry issued from her lips and she gazed at Phil in amazement.

"Oh, no such happiness can be in store for me," she cried. "No, this is a mistake, for James has been proving my son by his nurse and indisputable evidence—a birthmark."

"Hold!" cried Phil, wildly. "That I can prove false. I have here Mother Gruller's confession to substantiate Philip Harmon's declaration. Jim Dunton is no flesh and blood of yours. The birthmark was tattooed by Mother Gruller to deceive you. Your real child was never taken to Newton. To prove it here is my birthmark."

He turned his side and displayed the strange mark. All was clear to Mrs. Dunton now as a closed book.

"My Edgar—my child!"

And that was a happy moment. But kind, true Mrs. Mason was also a participant. The shaping of Phil's noble career, the wonderful traits which had been cultivated by her assiduous efforts, for all this praise was due her.

"I will ask only one thing in the way of recompense," she said.

"Name it!" cried Mrs. Dunton. "If it is my duty to do so, I will do it."

"It is a simple request, that I may still maintain the same relationship with you as I have to the past; in fact, that I may continue to call you my mother."

"My dear kind friend," cried Mrs. Dunton, "we will share him. Certainly your tie is almost if not quite as strong as mine."

When the joyful report was circulated that the true heir of the Dunton property was Phil Mason, the effect can be imagined. It was all so much like a romance that it had to be explained fully before any could comprehend or realize it. Mother Gruller had done the one good act of her life. But she lived to enjoy no reward, for her grief for the imprisonment of her son Gabe brought her to death's door, she being found the next day dead in bed.

No trace of Philip Harmon was found, and it was believed that he died in a madhouse, or took his own life. However, Phil had always reason to congratulate himself upon his rare fortune in finding the evidence of his identity in the burning house. He went to the new Dunton villa, a beautiful structure, to live with his true mother. But Mrs. Mason accompanied him, and became Mrs. Dunton's companion and warm friend. Phil is fortunate and happy in the possession of two loving mothers. Now that Phil had come into great wealth, he speedily arose to greater prominence in Fisherville. Of all the host of friends he possessed none were so overjoyed at his good fortune as the Rippletons.

"By gracious!" exclaimed the colonel. "I knew there was good blood in that boy. I tell you blood will tell."

A consolidation was shortly afterwards effected, Phil entering into equal partnership with Colonel Rippleton in the mills, and to-day they are in a flourishing condition. The town of Fisherville has become so prosperous that it is outgrowing itself, and there is danger that it will soon become a city.

Phil yet rows upon the river, and his inevitable companion, Agnes Rippleton. The day is chosen for their wedding, and need it be said that no happier bride will be led to the altar? Agnes has never been sorry for having pinned her faith to Phil Mason, now Dunton. For Phil did not discard his first name, retaining it by his mother's consent. He would hardly have seemed natural to the good people of Fisherville as other than brave, plucky Phil, the young fireman.

We have seen Jim Dunton in prison. Gruller and Barton are there yet. Mr. Chauncey Kane, the dandy, served a slight sentence for conspiracy, but never showed up in Fisherville again. The Fisherville fire department is still the glory of the town. The brave boys who have tracked down the firebugs, though occasionally the fire boys have a chance to distinguish themselves.

And Phil still retains his life membership, though placed upon the honorary list. Of course, his position and business forbid his "running with the machine" now, but there are times when the fire-bells bring to his veins the same old tingle, and to his heart the same wild leap as when he won his laurels and his fortune as Plucky Phil Mason, the Brave Boy Fireman.

Next week's issue will contain "THE BOY SLAVE; OR, A YOUNG NEW YORKER IN CENTRAL AMERICA."

CURRENT NEWS

PERMANENT TOBACCO FIELD

In East Drumore, Pa., on the farm of G. H. Haub, there is a small field that has been planted to tobacco for thirty-four years in succession, from which good crops have always been harvested.

BREEDING ZEBRAS

A farm near Milbrook, N. Y., is to be devoted, in part at least, to breeding zebras. The animals are handsome and, while not specially adapted for riding or heavy draft like the horse, are docile in harness and are very showy.

SELLS HIS LIFE SAVINGS FOR TWENTY-FIVE CENTS

Abraham Sohn, a grocer, of St. Louis, Mo., sold to W. H. Cohn for 25 cents his life savings, which amounted to more than \$500.

Cohn had been placing his savings into a can

of tea for safe keeping and put the can with the remainder of the stock in the case.

In the morning rush Cohn picked up by mistake the can in which he had his savings and sold it to Cole. The money was returned.

HARNESSING THE VOLCANO

It is proposed to make extensive drillings into the great active volcano of Kilauea (Hawaii) in an endeavor to determine the heat of the volcano, the quantity of steam underneath, the mineral constituents, and the solution of other relative questions. Borings are to be undertaken at the sulphur banks, at several places in the bottom of the crater, and in the region of recent lava flows at Kau Desert. It is intended to penetrate the surface where the lava flows are of known date, so as to learn what changes of temperature underground have taken place with the passage of time.

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Breaking The Record

—OR—

ROUND THE WORLD IN THIRTY-THREE DAYS

By WILLIAM WADE

(A SERIAL STORY)

CHAPTER X.

The Train Recaptured.

He was not dead, but severely bruised, and now the Irishman said to him in Russian, explaining the same to the others:

"These are friends of mine—Americans." Go and hide in the mountains and wait. Some one will be sure to come after you. I will tell them that you are dead down at the station and they won't bother with you."

The man answered gratefully and made his way as fast as he could into the mountains, while Michael Burns, the Irishman, rode on with Dick and the rest.

"You must come with us, Mike," said Mark. "This is no place for you, and you have done us a great favor. We are bound for Vladivostock, and then to the United States. There is no place like the States, and you should be there, my man."

"I'll go with you, sir, and be glad to do it, whether as your servant or anything you like. I never thought to get out of Siberia, but it was no good fortune to meet you, and I'll never forget it."

"And so you are a political prisoner?"

"Yis, and it's a lesson to me to lave politics alone, though that do be a thing that it's hard for an Irishman to do. However, I had nothin' to do with thim in Russia, the police merely gatherin' me in with a lot of others and rushin' me off to Siberia without judge or jury. It was meself that planned the thing on the guards, however, and the plan to get hold of a noble prisoner. Sure she do be a beauty, but no harm shall come to her head through me, and I med up me mind to phwin she told me who she was and axed me to take her back."

"Your companions may be angry that you have done this," said Dick.

"Sure they'll know nothing about it, but—"

The train was gone, and now they heard it among the mountains miles away.

"This is a pretty state of affairs!" sputtered Mark. "What business have they to run off with the train?"

"They may have gone for help," suggested Trix, "but at any rate, here it comes and is slowing up, so we are all right. Here, Mr. Burns, you may want this."

The young lady took a long dust-cloak she wore and threw it over the convict garb that the man wore, quite altering his appearance.

said Dick, "and perhaps I was wrong to mention such a person. But I certainly know a pass through the mountains which we can take and cut off the train at a steep up-grade. If we go on at once we can do it and get up!"

Then he suddenly wheeled his horse and that which Trix Renton was riding and dashed away at full speed in a different direction from the one they had come.

There was nothing for it for Dick and Mark but to follow, and they did so at a gallop, Burns calling out with a whoop:

"Come on, me bowld Americans; sure we're bound to bate the Rooshans yet, more power to us all!"

They managed to keep him in sight, although he rode at a gallop, and on they went through a strange region, seeing no one and seeming at times to be fairly penned in by rocks, with no way of escaping.

Then of a sudden there would a path open before them, and on they would go, keeping the Irishman and Trix in sight but not catching up with them.

"It's all right," muttered Mark. "The fellow knows that there is not much time to lose, and he does not want to waste a moment. He will bring up through all right, but I shall have something to say to the fellows in charge of my train, you may be sure. They had no business to leave here, and I am going to tell them so."

"It will do no good," laughed Dick. "They will not understand you, and if they do they will have some excuse to offer. It is Ildone who is doing this so as to get away from me. I don't believe his yarn of going around the world. He heard that you were, and so made that an excuse. He is a sly dog, but I will catch him yet."

They did not catch up to Burns or Trix Renton for some time, when at last they came upon an opening in the mountains and saw the railroad track, and then heard the sound of a train, but whether it had passed on or was approaching they could not tell.

"Have yez a red handkerchief or a red shirt to wave at thim?" asked the Irishman, as they reined in near the track. "The signal do be the same in Roosha as in the civilized parts of the worruld. It do be a steep grade here, and ye can hear thim puffin' as they come up. I was sure we would be ahead of thim, but I knew there were no time to lose so I kep' on and med ye folly me."

Mark took off a red neck-scarf he had on, and as the train suddenly appeared at the top of the steep grade, he waved it frantically, at the same time riding upon the track.

"I'll have something to say to those fellows," he sputtered. "They had no business to run away like that after I had paid for the use of the train all the way to Vladivostock."

"They may have gone for help," suggested Trix, "but at any rate, here it comes and is slowing up, so we are all right. Here, Mr. Burns, you may want this."

The young lady took a long dust-cloak she wore and threw it over the convict garb that the man wore, quite altering his appearance.

"It's a quick-witted girrul ye are," said the man, "and I do be obliged to ye."

(To be continued.)

GOOD READING

SIXTY-MILE SKI-SLIDE OPENED

The longest ski-slide in the world, extending over sixty miles, has been opened in Sweden. The course is laid out on an old road winding through the hills of a beautiful forest.

HERMIT'S LIFE SAVINGS OF \$9,000 ARE LOST

Joseph Hull, who lived alone, never had faith in banks, had been saving his money about his log cabin at Unionport, N. J., for many years. Every week he put part of his salary away in the hiding-place in the kitchen, under the floor near the chimney. As the deposit grew he watched it closer and closer, until it exceeded \$9,000. Each roll was in a roll by itself, bound with a rubber band. In a strong-canvas bag were the silver and gold coins that he had not changed into bills.

He counted the tenth roll of bills the other night and there was \$184 in it. That was in addition to the other nine rolls, each totaling \$1,000. He put the money back under the floor. He felt drowsy and, after fixing the coal fire, sat in a chair nearby to take a nap, but he slept longer than he intended and had neglected to look after the stove, which had become overheated and set fire to the place.

When Hull, who is more than 60 years of age, was finally awakened it was too late to reach the hiding-place, because the flames were there ahead of him. Neighbors, in response to Hull's cries for the firemen, sent a call to Phillipsburg, three miles away, but before the apparatus reached the house the flames had destroyed it, together with Hull's life's savings.

A MOUNTAIN OF SOAP

A whole mountain of soap has been found in the northern part of Arkansas by a mining engineer, Elmer Bird, who thinks the discovery will add greatly to the mineral wealth of the State. Mr. Bird, who has charge of the laboratory of the Engineering Exploration Company, with offices at Little Rock, says the mineral is saponite, a natural soap, and that such a vast bed has been discovered that it is believed to contain several hundred thousand tons.

So great is the faith in this mineral as a soap that plans have practically been completed for the formation of a company for the mining and converting of the mineral into a cleaning powder and placing it on the market.

Saponite is composed largely of magnesium, aluminum and silicate, a combination known to have great cleaning qualities.

The discovery of the mineral was purely accidental. While looking an assay of ore small particles of the mineral collected on Mr. Bird's hands. While washing his hands he noticed that the mineral lathered and functioned as soap.

Knowing that a great bed of the mineral was in the northern part of the State, Mr. Bird began to make tests and found it to be saponite. According to best references saponite is not known to occur anywhere else in the United States.

LOST IN ONTARIO WILDS FOR THREE WEEKS

Woodsmen on one of their rare pilgrimages out of the wilderness in quest of supplies brought to Algoma, Ont., the story of a man who lives in a log hut out near Michipicoten, fighting for life under the crude ministrations of lumberjacks after having wandered in the wilds, lost, starved and frozen, for twenty-one days.

The man, nearly a skeleton, covered by tattered rags and walking on bleeding feet, was picked up by two prospectors one day last week and carried into camp. When his mind cleared he told them he was Merrill Faro of Montreal and recounted a series of experiences which caused his rescuers to wonder that he still lived.

Four weeks ago Faro started out from a camp deep in the timber to fell trees for pulpwood. At dusk he started back to camp, but lost the trail. On Oct. 26 his fellow lumberjacks organized searching parties and sent scouts to outlying camps. They thought he was headed along Lake Huron to Sault Ste. Marie, but he did not appear there.

All this time Faro was wandering over hundreds of miles, hemmed in by hills, baffled by lakes, rivers and swamps. He staggered on without compass, matches or gun. He was reduced from a lusty man of 180 pounds to almost a skeleton. He gnawed at vines, leaves and shrubs. Once he caught a partridge with his hands.

He was more dead than alive when the prospectors stumbled upon him, only a few miles from the camp which had reported him missing.

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INTERESTING RADIO NEWS AND HINTS

PAINT AND VARNISH

The use of paint should be avoided in radio work. Even varnish should be left alone, as both of these will form an imperfect dielectric and increase distributed capacity, thereby lowering the efficiency of the set. This pertains to the making of coils such as tuning coils, variometer and couplers.

BAD CONDENSERS

A short circuit in a fixed condenser or variable condenser may be easily detected by aid of a dry cell and telephone receiver. If a loud click is heard in the phones when placed in series with the condenser, it is a sure sign that the condenser is short circuited somewhere. Usually in the variable type this can be easily detected by looking over the plates to find out where one plate is touching another.

GET RID OF INTERFERENCE

A regenerative receiving set acts as a miniature transmitter, and if carelessly handled will cause interference. Many of the howls heard in the phones are not due to the receiving set, but to some neighbor turning the dials of his set. Much of this trouble can be eliminated by burning the filament of the detector at minimum brilliancy to hear the desired concert. This will not only prevent interference but will give the tube and batteries longer life.

USE A SIMPLE TUNER

A simple means of tuning a crystal detector set is afforded by the variometer, a piece of apparatus widely known as one of the instruments comprising a form of regenerative receiving set. This piece of apparatus in its simplest form is easy to make; the parts necessary for its construction may usually be picked up about the house.

A tube made from an ordinary exhaust tube will serve nicely as the fixed coil or stator. This should be about four inches in length and two and one-half inches in diameter. The rotor should be made from a smaller tube of the same material but smaller in order that it may rotate freely inside of the stator.

WIRED WIRELESS COMMUNICATION

A publication giving an introduction to the various methods of fixed and mobile communication has recently been prepared under the direction of the Chief Signal Officer with the cooperation of the Bureau of Aeronautics. This pamphlet gives an explanation of how messages are carried to distant points by radio-frequency currents directed over wave guides, as ordinary telephone lines are used for voice. The publication contains details of radio and radio-telephone systems, and of radio and telephone for aircraft communication. The pamphlet is "Introduction of Fixed Radio Communication," Signal Corps Radio Communication Pamphlet No. 41, a copy of which may be obtained for 10 cents from the Superintendent of Documents, Government Printing Office, Washington, D. C.

A DANGEROUS STUNT

Audio frequency amplifying transformers have a very annoying habit of blowing out most unexpectedly, even when the value of "B" battery used is below normal. The fan will without thinking condemn the particular brand he has as a poor one, but the fault is just as likely to be his own.

If a transformer does not blow out the first time it is connected in a circuit there is no reason why it should ever blow, providing, of course, that an excess of plate voltage is not applied. One good reason why many reputable instruments go dead is that the plate circuit is often opened too suddenly. If the tube filaments are lighted at the usual operating temperature, this action will cause the development of a very high voltage in the transformer windings. This "inductive kick" voltage, as it is popularly known, lasts only an instant, but that is usually time enough for the very fine wire to burn out.

To avoid such accidents, the rheostats should be turned down before the telephone plug is removed. If a habit is made of this practice, the amplifier will work without trouble.

NOW THE RADIO PLAY

Radio Dramas have been broadcasted by the WGY station of the General Electric Company at Schenectady for nearly a year. During that period the little group of WGY players have had the largest audiences ever before accorded dramatic offerings. There are at least 2,000,000 radio sets in the country, and of that number 1,500,000 are almost nightly within range of WGY. From the very first the radio drama has been a success. Mr. Edward H. Smith, formerly an actor and director on the professional stage, has been handling this feature of the WGY programs. Mr. Smith and his players have pioneered in the art of the radio drama; they have had to develop a new technique. It has been found necessary to make essential changes in play construction, especially where a climax depended upon sight for its appreciation. The entrance to or departure from a room by one of the characters has to be indicated by sound, as a closing door. A bell helps somewhat in announcing a newcomer to the invisible stage. Various sound devices have been created to produce atmosphere. A telegraph key and an imitation of an engine whistle have helped in a railway station scene. Storms have been stimulated by devices similar to those used on the stage.

CONTROLLING GENERATION

If the grid and plate circuits of a vacuum tube are coupled together so that the energy can be fed back from the plate circuit into the grid circuit the tube will oscillate. When a tube oscillates it serves as a transmitter and is of no value for reception. To be of use for reception the circuit must be so adjusted that the tube is just at the point of oscillating. How to recognize the critical point is a puzzle to many.

The easiest way to determine whether the tube is oscillating is to short circuit the grid and

denser with a piece of wire, and touch the grid terminal of the socket. If a distinct click is heard in the phones when the finger touches the terminal and another click when it is removed, the circuit is oscillating.

There is no oscillation without regeneration. Regeneration is controlled by the tickler; the amount of current flowing in the filament circuit, the amount of plate voltage and, in some sets, the radio frequency, a potentiometer is employed to keep the amplifying tubes just below the point of oscillation. Adjustment of the plate variometer or other means of feed-back; regulation of the "A" battery rheostat and by adding or removing "B" batteries from the circuit play important parts in the reception of clear music.

THE JAPANESE RADIO LINK

The radio telegraph circuit between the United States and Japan is operated continuously, carrying a large portion of the trans-pacific telegraph traffic. When the recent disastrous earthquake devastated Tokio and Yokohama the radio service was not interrupted. The first news of the disaster came to the United States over this radio circuit. For several days thereafter the most important dispatches describing the extent of the damage came via the Radio Corporation. There are several Japanese stations working with American. First, there is the Iwami radio system, owned and operated by the Japanese Government, comprising a transmitting station at Haranomachi and a receiving station at Honolulu. The general location of these stations were determined by the comparative freedom of the district from seismic disturbance. The transmitting aerial at Haranomachi is of the umbrella type, supported by a self-supporting central tower and an outer ring of 18 spliced, wooden masts at a radius of 1,300 feet. The central tower is a reinforced concrete tube 600 feet high, 57 feet in outside diameter at the base and 14 feet outside diameter at the top. The wooden masts in the outer ring are 250 feet high and consist of three sections.

TUBES FIT BATTERIES

Dry cells are used extensively for vacuum tube filament current by amateurs who do not care for the storage battery.

The dry battery is a fairly good substitute, but it is not advised except with certain tubes because these cells soon become exhausted and must be replaced. This continual replacement soon mounts up to the cost of a storage battery.

A number of flashlight batteries may be connected and used for the plate voltage of the tube.

Different tubes require different values of voltage and amperage. A vacuum tube of the storage battery type requires the pressure of 6 volts and a filament current of one ampere. Recently there has appeared on the market other types of tubes that require smaller voltages and a lesser filament current. Dry cells can be used successfully with these tubes.

Most dry cell tubes require a small amount of filament current but the voltage must be watched. In the case of the UV201 A and C501 A tubes a 6 volt battery will have to be secured and used with a resistance of 30 ohms. This also applies to UV100 tubes which require 6 volts.

Therefore in order to apply dry cells to these tubes a combination of dry cells in series is required in order to obtain the correct voltage.

VOLTAGE CONTROL

The various detector tubes require careful adjustment of the plate battery for their proper operation. There are no two tubes that possess the same characteristic either in the filament current or plate supply. It is easy for any one to make adjustments on the filament since the rheostates give fine control of the current; in fact, for micrometer adjustment vernier rheostat may be employed.

Vernier rheostats in some cases have an extra arm built on the same shaft as the regular arm and travel over a single wire tightening around the body of the instrument. Other rheostats of the micrometer type are composed of a carbon resistance embodying the principle of compressed carbon granules.

High voltage batteries referred to as plate batteries or B batteries can be had in tapped or untapped form. The tapped battery has five or more taps fastened in a composition of wax. Each one of these posts is connected to a cell in the battery so that by connecting leads to different posts various values of voltage can be secured. There is also an additional post in the corner of the battery which is the other connection of the battery, usually the negative post.

In order to jump from one post to another, a test clip of some form can be used, but it is more convenient to put five contact points on a switch arm on the panel of the set in which condition the variation of voltage may be obtained by simply turning the arm or knob. This entails a little work, but is compensated for by the ease and rapidity with which tubes can be tested to determine the relative efficiency of different types.

If the switch arm is so wide or the contact points so close together that the blade touches two posts at the same time the cell between these posts will be short circuited. Care, then, should be taken to see that the points are kept apart from each other.

Another valuable piece of apparatus to be added to a vacuum tube outfit is the battery potentiometer. This gives fine adjustment to the tube and is most important when employed with radio frequency sets. The battery potentiometer comes in two sizes—200 ohms and 400 ohms. The 200 ohms is satisfactory when used with straight regenerative receivers. The ends of the winding are connected directly across the A or filament lighting battery while the arm is the common point for the input and output circuits of the tube. The potentiometer, despite its high resistance, acts as a drain on the battery, therefore to do away with this loss it is essential to have the instrument connected only when the set is in operation. For this reason a double pole switching arrangement is made.

Before making any adjustments set the arm at the middle of the winding. Then proceed to experiment with the other tube controls. Listen in for a while and move the potentiometer arm slowly until signal strength is increased. The effect of this movement may be small on local stations, but it is noticeable on the weak distant ones.

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ITEMS OF INTEREST

POOR EYESIGHT AMONG EMPLOYEES

Examination of 10,000 employees in factories found 63 per cent. with uncorrected, faulty vision. Of 675 employees in a typewriter company 53 per cent. were found to be in need of glasses. Among 3,000 employees in a paper-box factory the percentage of normal was only 23.

LEATHER MADE OF EXPLOSIVES

The latest exploit of Henry Ford is to buy 55,000,000 pounds of deteriorating cordite gunpowder at one fifth war-time quotations, and use it for making artificial leather. Besides halving the cost of leather, of which 20,000 square yards are turned out daily, this also releases for other purposes more than a million gallons of benzol annually.

INSECTS EATING UP SAGHAIEN FORESTS

During 1921 the forests of the southern half of Saghalien (Japan) have suffered severely from an insect blight or pestilence. According to information received from the company owning the greater portion of the forests by Vice Consul B. Smith, Yokohama, 15,750 acres of forest were destroyed by this insect during last year, or about 100,000,000 cubic feet of standing timber. It is expected that some of the timber cut still to be cut if cut within a year.

SLAYS TWO BIG GRIZZLIES

Major Carter, head of the A. M. L. Co., member of a Government survey party operating in the Mount McKinley region, has two enormous grizzly bears while making his way to a section made for data for the purpose of survey. The bears were 100 yards apart from each other and the point of encounter was in a narrow canyon of snow, timber and rocks.

With the other members of the party Major Carter spent the night in the canyon. The bears were of the grizzly class with the black coat. The bears were seen by Major Carter to within twenty feet of him, and the fifth bear was a very large and old one.

DANES SOLVE PROBLEM OF THE SPEAKING FILM

Two Danish civil engineers, M. Axel Petersen and M. Arnold Poulsen, demonstrated before an audience of prominent persons in Copenhagen a few days ago, a new invention by which the problem of a "speaking film" is solved.

The human voice is photographed by a special method on a separate film, which is not connected with the picture film. Thus the voice film can be handled separately, which is regarded as a great advantage.

The audience was much impressed by the results demonstrated by the inventors. Prof. P. O. Pedersen, Director of the Polytechnic High School, Copenhagen, who worked with M. Valdemar Poulsen (a pioneer of wireless telegraphy), declares that the problem has been solved and in the only possible way.

LAUGHS

The Janitor—How did you come to lose your job? Ex-Office Boy—Mine and the boss's grandmother died on the same day.

Miss Young—In Turkey a woman doesn't know her husband until after he's married him. Mrs. Weld—Why mention Turkey especially?

But—I was talking to your girl yesterday, Jim. —Are you sure you were doing the talking? But —Yes. Jim—Then it wasn't my girl.

He—Just one kiss, please. She—If I let you kiss me once you'll want to kiss me again. He—No, I won't. She—Then you won't let me to kiss me at all.

Some one had left a button on the table in the restaurant in place of a tip. "Ah, well," philosophized the waiter, "everything comes to him who waits."

Mrs. Muldoon—Th' trouble with my husband is that he never looks to my way thing ever in a week. Mr. McGrogan—Yez do him right, Mrs. Muldoon. Of never saw a dinner man than your husband when it comes to a strike.

"You must have had some strong suggestion when you wrote this poem." "Verily," said the poet, "I had." "And what was it, may I ask?" "A dispossess notice."

She—You had very kind to invite me to go sleighing, but—did your horse ever run away? He—Often. You see, I am careless about horses, and often let the reins fall to the bottom of the sleigh and drive with my feet. She—I'll go.

Jack—You say you fell from a ladder and were painfully injured? Why don't you stop climbing on your iron horse company? Company—I guess, but you are a very good company. I was climbing to the top of the ladder and I fell from the bottom of the ladder.

INTERESTING ARTICLES

GIRL KILLED WHILE JOKING

"I couldn't commit suicide if I wanted to," nineteen-year-old Rafale Manfredonia of No. 3203 Wilkinson avenue, the Bronx, gayly exclaimed to her sister, Eva, thirteen, the other night as she pressed the muzzle of an automatic pistol to her right temple and pulled the trigger.

There was a report and a bullet ploughed through her brain. Eva ran screaming from the house. Patrolman Mischler of the Westchester station summoned an ambulance from Fordham Hospital, but Rafale was dead.

Eva told the police Rafale, impressed by stories of robberies in the neighborhood, had purchased the revolver for protection without letting her parents know anything about it.

CHAMPION HEN SCORES WITH 276 FOR A YEAR

Nebraska's champion hen, Queen of Cherrycroft, laid 276 eggs in a contest lasting a year, which has just been finished. She defeated other high-powered layers from several States of the nation, shattering a former record of 272 eggs established some years ago. The contest was conducted under the auspices of the University of Nebraska Agricultural College.

Queen of Cherrycroft is a white Leghorn belonging to John W. Welch, who operates a big poultry farm near Omaha. A barred rock owned by Mrs. H. C. Kleinsmith, Hoff, Ore., was second in the contest with 265 eggs.

Nebraska has a hen population of 11,615,257, producing 50,000,000 dozen eggs annually. The poultry and egg industry is worth \$35,000,000 a year to Nebraska.

NATURAL WOOD WITH ARTIFICIAL TINT

Many of our most famous woods are known by their color. Many wood, we know, is black. Walnut is a brownish-black and mahogany is red. Were we to go into a furniture store to purchase a walnut table we should be considerably surprised if the merchant were to attempt to sell us a table from a greenish-colored wood and tell us that it was walnut. We probably walk out and brand him as several kinds of a liar. But he might be perfectly truthful. The "black" walnut might be green, or, conversely, the green wood might be "black" walnut.

Scientists have discovered that the wood of growing trees may be colored with aniline dyes so that before the tree is cut and sawed. A slanting hole is bored through the side of the tree trunk and into the heart a dye solution, filling the hole to the heart. The natural dyeing process of the tree discolors the dye and so that it is very still, so that when the lumber is sawed the color is retained. It is said that almost any color may be obtained in this way, or that by an infusion of yeast the wood may be colored a tawny brown, a green, and a "ginger" wood of orange or red color. He may be right.

PAINTING OF CHRIST WINS LIBERTY FOR COUNTERFEITER

A mural painting in the chapel in the Federal Penitentiary, Atlanta, Ga., won freedom for Max Sasonoff, former member of the Metropolitan Opera Company. After serving a year and a half of a three-year sentence for counterfeiting, Sasonoff walked out of the prison gates the other morning, paroled.

"Jesus Ministering Unto the Helpless" is the title of Sasonoff's painting, and many critics have characterized it as one of the finest examples of mural painting in this country.

Visitors to the prison have taken great interest in it, with the result that efforts were made to obtain a pardon or a parole for Sasonoff.

Of Russian birth, he studied under noted European operatic teachers and sang with Chaliapin and Caruso on the Continent. He was a member of the Metropolitan Opera Company for some time and achieved considerable reputation as a painter, exhibiting several canvasses.

Sasonoff was convicted in New York of preparing plates for a counterfeit bank note. His defense was that he was compelled by a relative to complete the plates after he had discovered the use to which they were to be put and had refused to finish.

MOST SENSITIVE OF INSTRUMENTS

Remarkable progress has been made during the past decade in the development of scientific instruments of unusual sensitivity. It is now possible to measure the ten-thousandth part of an inch, and so accurate have our scientific instruments become that the parts of engines must be calibrated to this precision. Another machine exists with which it is possible to rule nearly 30,000 lines in the space of an inch.

One of the greatest accomplishments of makers of astronomical instruments is the invention of a highly polished mirror, made of metal, which splits a single beam of light into seven beams, each of a different color. The seven beams in themselves constitute a single white beam.

Another instrument is so sensitive that it responds to the heat of a man's body at a distance of 200 yards. Other instruments have been developed and are now in use for the diagnosis of disease. It is known that when a man tells a lie his heart undergoes a slight change in its rhythmic beat, due to his nerves, and these instruments are so delicate that they will indicate the change, however slight, that takes place.

We recently read of a machine so delicate in its precision that it will inscribe a message of several hundred words on the head of a pin. A message of several thousand words in length might be thus inscribed on the head of a needle. The purpose of such fine writing might be commercial, but even if the use for it would seem to be of little value.

PLUCK AND LUCK HERE AND THERE

EXCAVATION ON SEA OF GALILEE

Part of an ancient wall and columns belonging to the ancient city of Biberias on the Sea of Galilee have been recently recovered. As soon as the ruins were discovered expert archeologists were summoned and the excavations will be carried out under scientific control. It was near this city that Jesus preached his Sermon on the Mount, and Mary Magdalene is believed to have come from a near-by town.

SHOT BY BROTHER

While at target practice in the back-yard of his home, No. 481 Mamaroneck avenue, Mamaroneck, N. Y., the other afternoon, Henry Stone, eighteen, was shot by his brother, Franklin, twenty-two. The rifle, a .22 calibre repeater, was accidentally discharged while being loaded.

The accident was witnessed by their mother, Mrs. Michael Hogan, wife of an official of the White Plains Water Department. She rushed to the yard to find Henry unconscious and his brother leaning over him.

At the Portchester Hospital, where the bullet was removed, it was said Henry had been struck in the right groin. Though the wound is dangerous, he probably will recover. Franklin was arrested on a technical charge of assault and released in the custody of his parents.

THREE ROOMS AND BATH ON WHEELS

One of the striking novelties of the Paris Salon was a large automobile bungalow built by Automobile Industrielles Saurer. The wheelbase of this large machine is thirty feet. Bedrooms for three people are provided besides a bathroom, a kitchen with a good-size range and other conveniences. The driver sits in an armchair in the front room and controls a sixty-horse-power engine capable of propelling this monster at forty miles per hour.

In contrast to this giant is the little two-seated Santax which sells for about \$285, the former selling for about \$13,500. This midget is seven feet long, has a single cylinder engine and a top speed of about sixty miles per hour.

METALS FOUND IN MARINE ANIMALS

Marine animals are made partly of metal. Examination by Miss H. W. Severy of Stanford University of sixteen denizens of the sea from sponges to whales has demonstrated that all contain some metal, most of them copper. For several years it has been known that copper is present in sponges and sometimes it occurs to such an extent that the sponges turn green and may even give the water a greenish color. Miss Severy showed that copper is also found in sea anemones, corals, mollusks, and even in the bones of whales. The average amount of copper found in these animals was about five per cent of the dry weight, while the zinc content

amounted to four parts in one million. Certain animals such as the snake have long been known to have some copper in their blood which gave it the blue color. It acts in the same way the iron acts in the blood of higher animals: it is a carrier of oxygen to the tissues. The part zinc plays in the animal body has not been ascertained, although it is assumed that it functions as an aid to the digestive fluids. Zinc apparently is more widely distributed than copper, for the investigator found it in two higher animals belonging to the group of mammals, namely, the sea lion and the whale; the latter showed no trace of copper in its body.

THE BREEZIEST SPOT ON THE ATLANTIC COAST

The first part of the researches on the vegetation of Long Island, by Norman Taylor, curator of plants at the Brooklyn Botanic Gardens, has recently been published as a part of Volume II of the Brooklyn Botanic Garden "Memoirs." This part deals with the vegetation of Montauk, the peninsula at the eastern end of the south fluke of Long Island, a region of great interest from a botanical, geological and meteorological as well as an historical point of view. In an attractive literary style Mr. Taylor describes the condition on the peninsula as far back as historical records go and brings the account up to the present with prognostications as to the future.

One of the main points of interest is the continual struggle for domination between grasslands and forest. On the bleak, open downs, existing climatic conditions, especially the wind, makes forest growth impossible. Mr. Taylor states that Montauk is the windiest place on the Atlantic coast, the wind movement there averaging 155,975 miles per year which is nearly double the rate at the middle of the island and averages twice as much as it does at Port Jefferson for instance.

"During many single months," the author says, "the wind movement at Montauk averages 13,000 miles (about 6, at Port Jefferson), and hourly velocities of 60, 70, 75 and 80 miles are not uncommon, while the wind has been known to blow as much as 84 and 86 miles an hour during severe storms." He describes the finding of the kettle-holes (cavities left after glacial recessions) occupied by trees, but clipped off at the down's level by the wind action. On the leeward side of the forest known as Hither Woods Mr. Taylor notes also a gradual encroachment of young forest onto the downs, and by several ingenious methods has estimated that the rate of this encroachment is about 400 feet in two years.

The work is rich in illustrations taken from local historical records and is a very valuable addition to our knowledge of Long Island, from the historical record of the Montauk peninsula. Part 2, "Floral of Montauk," which is now published together with Part 1 contains a list of the plants at Montauk.

How I increased my salary more than 300%

by
Joseph Anderson

I AM just the average man—twenty-eight years old, with a wife and a three-year-old youngster. I left school when I was fourteen. My parents didn't want me to do it, but I thought I knew more than they did.

I can see my father now, standing before me, pleading, threatening, coaxing me to keep on with my schooling. With tears in his eyes he told me how he had been a failure all his life because of lack of education—that the untrained man is always forced to work for a small salary—that he had hoped, yes, and prayed, that I would be a more successful man than he was.

But no! My mind was made up. I had been offered a job at nine dollars a week and I was going to take it.

That nine dollars looked awfully big to me. I didn't realize then, nor for years afterward, that I was being paid only for the work of my hands. My brain didn't count.

THEN one day, glancing through a magazine, I came across the story of a man just like myself. He, too, had left school when he was fourteen years of age, and had worked for years at a small salary. But he was ambitious. He decided that he would get out of the rut by training himself to become expert in some line of work.

So he got in touch with the International Correspondence Schools at Scranton and started to study in his spare time at home. It was the turn in the road for him—the beginning of his success.

Most stories like that tell of the presidents of great institutions who are earning \$25,000 and \$50,000 a year. Those stories frighten me. I don't think I could ever earn that much. But this story told of a man whom, through spare time study, lifted himself from \$21 to \$75 a week. It made an impression on me because it talked in terms I could understand. It seemed reasonable to suppose that I could do as well.

I tell you it didn't take me long that time to mark and send in that familiar coupon. Information regarding the Course I had marked came back by return mail. I found it wasn't too late to make up the education I had denied myself as a boy.

I was surprised to find out how fascinating a home-study course could be. The I. C. S. worked with me every hour I had to spare. I felt myself growing. I knew there was a bigger job waiting for me somewhere.

Four months after I enrolled my employer came to me and told me that he always gave preference to men who studied their jobs—and that my next



salary envelope would show how much he thought of the improvement in my work.

Today, my salary is more than 300% greater than it was when I began my studies. That increase has meant a better home and all the luxuries that make life worth while.

What I have done, you can do. For I am just an average man. I had no more education to begin with than you have—perhaps not as much. The only difference is a matter of training.

TO every man who is earning less than \$75 a week, I say simply this:—Find out what the I. C. S. can do for you!

It will take only a minute of your time to mark and mail the coupon. But that one simple act may change your whole life.

If I hadn't taken that first step four years ago I wouldn't be writing this message to you today! No, and I wouldn't be earning anywhere near \$75 a week, either!

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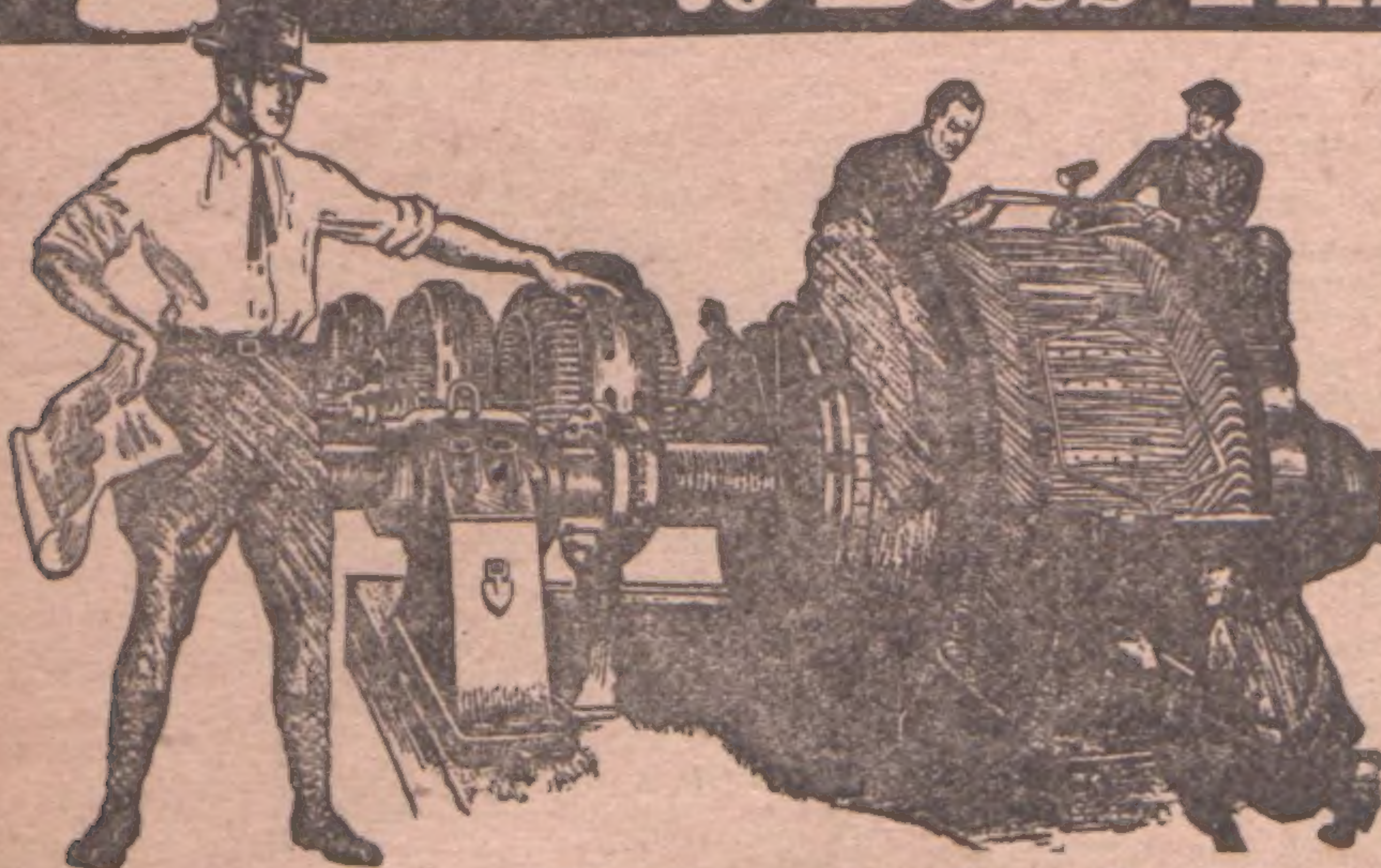
While it is generally accepted that ice cream was first made in Italy, perhaps at about the time America was discovered, it was left to the United States to develop the industry on a great scale. Prof. Martin Mortensen, head of the department of dairying in the Ohio State College, said recently at the World's Dairy Congress.

It is thought that ice cream was introduced into France about 1550, and the earliest record of it in England was found in a house-keeping magazine published in 1786. But it was not until 1751 that the first wholesale ice cream business was started by Jacob Russell in Baltimore.

The ice cream business in the United States increased from 80,000,000 gallons in 1909 to 263,529,000 gallons in 1912. The ice cream cone was invented in 1904.

Professor Mortensen attributed the great success of the industry to the sound business principles employed by the men who entered it. He said the rapid development of machinery, trade journals and instruction in colleges in the art of ice cream making had done much to increase the business.

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